



Marlin P. Jones & Assoc. Inc.



www.mpja.com

Website:
www.mpja.com
Online Buying

Phone:
Order: 1-800-652-6733
Fax: 1-800-432-9937
Info: 1-561-848-8236

POWERED BREADBOARD

Breadboard with built-in power supply.
Dual LED Meters monitor the + & - Variable output supplies.

Features:

2 LED Voltmeters,
4 power supply binding posts,
5 Distribution strips (500 pts),
3 Breadboard panels (1890Pts.),
One +5VDC @ 1.5Amp supply,
One 0 to +16VDC @ 500mA supply,
One 0 to -16VDC @ 500mA supply
All parts are mounted in an ABS plastic case.
Includes IEC power cord.

W: 7-7/8" D: 10-1/2" T: 3-3/8" WT: 2.8

STOCK #	DESC.	1EA
32920-TE	Powered Breadboard	\$99.95



10.4V STEPPER WITH BRACKET, CONNECTOR & 6.35 MM COUPLING

Single axis set with Stepper, Mounting Bracket, 10in. Pigtail and Coupling for a 6.35mm shaft.

Motor: MINEBEA: NEMA 17, 2 Phase Bi-Polar 4 lead

COIL: 10.4V/33A/32ohm/71mH

STEP ANGLE: 1.8 deg

340mN/m (48oz/in) holding torque.

4 M3-0.5 Threaded mounting holes.

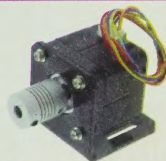
Coupling: 1" X 3/4" dia Helical Cut Aluminum

Bracket: L: 2" (Motor) L: 2-1/16" (Base) W: 1-15/16", Gusseted steel "L" Bracket, Black finish. Four holes for motor & 2 slots for mounting the assembly

Includes Allen Wrench for Coupling and 4 Screws for Bracket.

WT: .86

STOCK #	DESC.	1EA
33448-MS	Stepper/Connector/Coupling/Bracket	\$10.95



3 AXIS MOUNT

Precision stage mount with 3 independently adjustable Axes (XYZ).

Table Size: 40 X 40mm

Base Size: 40 X 40mm

X&Y Stroke: 13mm (+-6.5mm Centered)

Z Stroke: 10mm (+-5mm Centered)

Micrometer Scale: 0.01mm

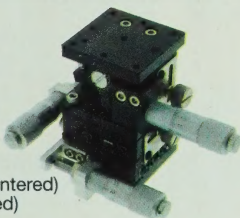
Accuracy: 0.01mm

Parallelism: 0.015

Max Force: 19.2N

L: 4" W: 2-3/4" H: 2-9/16" min. WT: 1.1

STOCK #	DESC.	1EA
33383-MI	3 Axis Stage	\$169.95



L/C METER

Bare Bone, Self contained, micro-processor based, Mini Inductance/Capacitance meter for bench use.

Great for testing and selection of components.

Power: 5VDC

Display: 2 X 16 Backlit LCD

Measuring Ranges:

Capacitance: 0.01pF - 10uF

Resolution: 0.01pF

Hi Cap: 1uF-100uF

Resolution: 0.01uF

Accuracy: 0.01pF-1pF: 5%

1pF-1uF: 1%

1uF-10uF: 5%

Hi Cap: 1uF-100mF: 5%

Inductance: 0.001uH - 100mH

Resolution: 0.001uH

Hi Ind: 100mH-1H

Resolution: 0.001mH

Accuracy: 0.001pF-1uH: 5%

1uH-100mH: 1%

Hi Ind: 100mH-1H: 1%

1H-100H: 5%

Connections:

Power: 5.5X 2.1mm Coaxial Jack

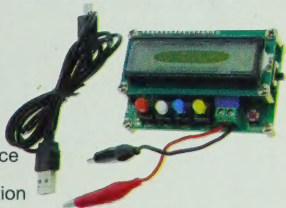
USB Mini B Jack

Test: Terminal Strip with 3" Clip Leads

Includes 3ft. USB Power Cable

W: 3-1/4" H: 2" T: 1-1/8" WT: .3

STOCK #	DESC.	1EA
33374-TE	Mini L/C Meter	\$28.95



PROTOBOARD SPECIAL

SPECIAL 5 pc. set of

170 tie point solderless

breadboards with 5 Protoboards with matching pattern.

Breadboards: 1ea. Red, Blue, Green, Yellow & White breadboards with ABS plastic body. Nickel plated contacts Rated 2A Max. Contact resistance less than 1 milliohm @ 1kHz.

Suitable for 19-29 AWG wire and all DIP size components.

Interlocking edges for combining multiple boards.

L: 1.9in. W: 1.4in. H: .37

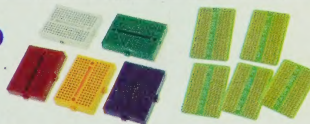
Protoboards: Single Sided .062" FR-4 board

Holds DIP IC (s) with up to 30 leads (2X15) DIP ICs with .1" lead pitch & .3" Package pitch. Each DIP lead has 5 pads bussed together. 170 total holes.

L: 1-5/8" (41mm) W: 1-5/16" (34mm)

WT: .15

STOCK #	DESC.	1EA
33353-MI	5 Color Breadboards + Protoboards	\$6.95



2600PC. SUPER RESISTOR KIT

Kit of 1/4W 1% Metal Film resistors.

Contains 20ea. of 130 Values (2600pcs.)

Values from 10ohm -910K plus 1.0M, 1.5M, 2.0M & 3.0M

X Multiplier = Value

#

1.0	1.2	1.5	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6
3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1	

Multiplier

1, 10, 100, 1K, 10K & 100K

WT: .8

STOCK #	DESC.	1EA
33418-RS	2600pc, 1/4W Resistor Kit	\$14.95



BI-PIN G-4 LED MODULES

G-4 Bi-Pin lamp module features 12 #5050 Warm or Cool White LEDs mounted on a round board made for installation in fixtures. Side mounted G-4 Pins for connection.

Voltage: 12VAC/DC.

Current: ~.100A @ 12VDC

Light Output: ~ 110 lumens

Color Temp: Warm:2800-3500 Cool: 5500-6500

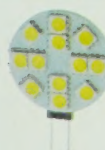
120 deg. beam angle.

DIA: 1-3/16" + Pins

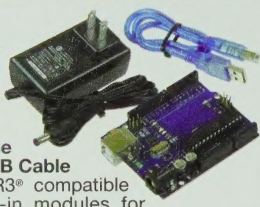
T: 5/16"

WT: .01

STOCK #	DESC.	1EA
33410-OP	G-4 Warm White LED Module	\$1.95
33411-OP	G-4 Cool White LED Module	\$1.95



UNO-R3 MICRO CONTROLLER KIT



Arduino UNO-R3® Compatible Includes Power Supply & USB Cable
Full featured Arduino UNO-R3® compatible controller. Accepts all Plug-in modules for Arduino controller. The UNO is one of the most widely used microcontrollers for experimenters, hobbyists, robotists etc. Information & Freeware available through www.arduino.cc/en and others on-line.

Processor: 16 MHz ATmega328 Power: 5VDC (Recommend 7-12VDC)

Digital I/O: 14 (with PWM available on 6)

Analog Input: 6

Memory: Flash: 32K-.5K for bootloader

SRAM: 2K

EEPROM: 1K

.1in. female headers for direct connection to functions

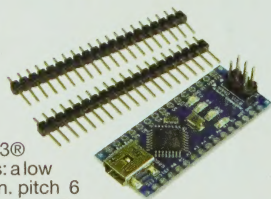
USB port: Type B female

Power Port: 5.5mm X 2.1mm Jack

WT: .9

STOCK #	DESC.	1EA
30297-MP	UNO Compatible Controller Kit	\$19.95

NANO V3 MICRO CONTROLLER



Arduino NANO compatible

Full featured Arduino NANO V3® compatible controller. Features: a low profile Mini USB connector: .1in. pitch 6 pin header for I2C connection. Auto Reset on Download, Information & Freeware available through www.arduino.cc/en and others on-line

Processor: 16 MHz ATmega328

Power: 7-12VDC (Operating 5VDC)

Digital I/O : 14 (with PWM available on 6)

Analog Input: 8

Memory: Flash: 32K-2K for bootloader

SRAM: 2K

EEPROM: 1K

Ports: Arduino I/O Pins

I2C 6 pin header

USB port: FTDI FT232RL Interface Chip

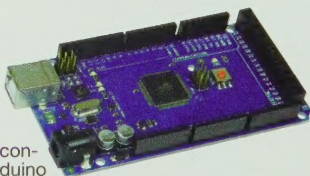
Type Mini B Connector

Power: 5V from USB, 6-20V Unregulated via Pin 30, +5 regulated via Pin 27, Auto select. Manual Reset switch. .1in. pitch holes for headers or direct connection to functions.

L: 1.7" O/A W: 0.7" H: .45" WT: .015

STOCK #	DESC.	1EA
31354-MP	NANO V3 Compatible Controller	\$9.95

MEGA R3 CONTROLLER



MEGA2560 Clone

Full featured MEGA® controller. Based on the Arduino MEGA. Compatible with most existing Duemilanove & Dieci program, shield & IDEs The Mega is major step up in processing power. The Arduinos are the most widely used microcontrollers for experimenters, hobbyists, robotists etc. Information & Freeware available through, forums, www.arduino.cc/en, & others on-line.

Processor: 16 MHz ATmega2560

Power: 5VDC (Recommend 7-12VDC)

Digital I/O : 54 (with PWM available on 14)

Analog Input: 16 (2 used for I2C communication)

UART Port: 4

Memory: Flash: 256K-8K for bootloader

SRAM: 8K

EEPROM: 4K

.1in. female headers for direct connection to functions

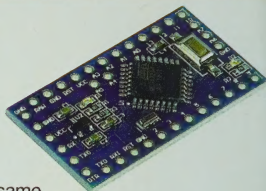
USB port: Type Mini B female

Power Port: 5.5mm X 2.1mm Jack

L: 4-1/4" O/A W: 2-1/8" H: 1/2" WT: .1

STOCK #	DESC.	1EA
31055-MP	MEGA2560 Controller	\$27.95

PRO-MINI MICRO CONTROLLER



Arduino PRO MINI AVR Core Development Board with Installed Bootloader

Arduino ProMini Clone- Get the same power as the UNO, or Nano in a low cost and small footprint. Features a Atmega328, 8bit, 16mHz processor, built in 3.3V regulator, 8 analog inputs and up to 14 digital I/O pins. This module does not have a USB connector. There are 5 dedicated 100 mil spaced pads for connecting the FTDI cable (DTR,TXO,RXI,VCC,GND) or a USB/TTLconverter module. The ProMini is ideal for use after you have perfected your idea on a Nano or Uno and want to embed it in the final project. Intended for advanced users. 1st. time Users should take advantage of the Arduino Nano to gain skills. Header pins not included. Code libraries, applications and schematics, Information & Freeware available through www.arduino.cc/en and others on-line.

The pre loaded Bootloader, allows Programming with an (off board) USB to TTL converter (our Stock # 31573) or a FTDI smart cable

Processor: Atmega328 @ 16mHz

Power: 3.3-6VDC On-Board 3.3 V Regulator

Note: for 3.3V input Use the **Vcc** Pin

for 4-6V input Use the **RAW** pin NOT BOTH

Supply Current 4 - 9mA (no load on I/O)

Analog Inputs 8 (10-bit ADC)

Digital I/O: 14 (with PWM available on 6)

Memory: Flash: 32K (-2K for bootloader)

SRAM: 2K

EEPROM: 1K

Ports: Arduino I/O Pins

6 Pin header for direct wiring to off Board USB

connector (Not Supplied)

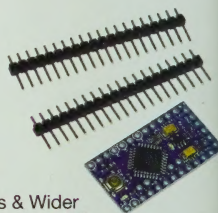
Manual Reset Button

.1in. pitch holes for I/O headers (NOT Supplied) or direct connection to functions

L: 1-5/16" W: 11/16" H: 1/8" WT: .01

STOCK #	DESC.	1EA
31811-MP	Pro-Mini Compatible Controller	\$4.95

ENHANCED PRO MINI MICRO CONTROLLER



Arduino PRO MINI AVR Core Development Board with Headers & Installed Bootloader

Arduino ProMini Clone with headers & Wider Voltage Range. Get the same power as the UNO, or Nano in a low cost and small footprint. Features a Atmega 328, 8bit, 16mHz processor, built in 5V regulator, 8 analog inputs and up to 14 digital I/O pins. This module does not have a USB connector. There are 5 dedicated 100 mil spaced pads for connecting the FTDI cable (DTR,TXO,RXI,VCC,GND) or a USB/TTLconverter module. The ProMini is ideal for use after you have perfected your idea on a Nano or Uno and want to embed it in the final project. Intended for advanced users. 1st. time Users should take advantage of the Arduino Nano to gain skills. Information & Freeware available through www.arduino.cc/en and others on-line.

The pre loaded Bootloader, allows Programming with an (off board) USB to TTL converter (our Stock # 31573) or a FTDI smart cable

Features:

Processor: 16 MHz ATmega328

Power: 3.3-12VDC On-Board Regulator (Operating 5 VDC)

Note: for 3.3-5V input Use the **Vcc** Pin

for 5.5-12V input Use the **RAW** pin NOT BOTH

Digital I/O : 14 (with PWM available on 6)

Analog Input: 8

Memory: Flash: 32K (-2K for bootloader)

SRAM: 2K

EEPROM: 1K

Ports: Arduino I/O Pins 6 Pins for direct wiring to off Board

USB connector (Not Supplied)

Manual Reset Button

.1in. pitch holes for headers (Supplied) or direct connection to functions

L: 1-5/16" O/A W: 11/16" H: 1/2" O/A WT: .012

STOCK #	DESC.	1EA
31355-MP	Pro-Mini Upgrade Controller	\$4.95

RASPBERRY-PI 2B STARTER SET

Full featured 32 bit, Rasp- berry-Pi 2 Model B
Small, card sized microcom- puter. Features: Broadcom's BCM2836 SOC 900mHz pro- cessor,1GB RAM and VideoCore IV 3D Graphics core
Requires you to download Operating System to your SD Card
Software: Full range of ARM GNU/Linux distributions
NOOBS, Raspbian, Pidora, Windows10 (Fall of 2015)
[For details, instructions and downloads see below]
Processor: 900MHz BCM2836RIFBG ARMv7
Power: 5VDC 1.8A Via a micro USB connector depending on USB & Port loading.
/O: 4 USB 2.0 Ports
1 Ethernet 10/100 Port
1 HDMI Port (Rev. 1.4)
1 3.5MM 4 conductor Audio/Video Jack
1 Camera Ribbon cable connector (CSI)
1 LCD Display Ribbon cable connector (DSI)
40 Pin header for SPI, & GPIO, UART, Power
Storage: Micro SD Card Slot (8GB min needed) (SD card stores Operating System)
USB port: Type A female
Power Port: micro USB
L: 3" O/A W: 2-1/2" H: 3/4"

Industrial aluminum case
Case designed for end use Applications in equipment, field, or factory. Micro fan mounts in case with double side tape and connects to 5V & ground on the Pi GPIO header.
Slot in case for I/O port wiring.
USB Ports, Network, A/V & HDMI ports available through case.
Notes: You cannot connect a 40 Pin Breakout Cable & the fan at the same time.
S/D card slot is not available through the case
Power Supply & Cable
Higher Output Supply & Cable for the Raspberry- 2B.
Includes a 5V 4A regulated plug supply with a 5.5/2.1mm Plug and a mating 4-1/2in. adapter cable with a USB Micro B Plug for the Pi.

STOCK #	DESC.	1EA
32670-MP	Raspberry-Pi-2B Starter Set	\$75.95

ARDUINO CAMERA MODULE

2M Pixel Camera for UNO & MEGA
ArduCAM-F RevB is an Arduino based open source camera Shield including a 2 Mega Pixel OV2540 CMOS camera module with JPEG output. More info at www.arducam.com & www.arduino.cc/en.
Power: 5 & 3.3VDC from Controller
Shield I/O are 3.3 & 5V Tolerant
Storage: SD/TF Card socket (Card not included) support BMP/JPG
3MB FIFO for Frame buffering
Raw RGB Capture resolution: 640X600,
Supports 2 mp (1600 X 1200 JPEG image capture & storage
GPIO expansion support
SPI Slave interface
Trigger In & Out for event recording.

L: 3-7/8"	W: 2-7/8"	H: 5/8" O/A	WT: .08
STOCK #	DESC.	1EA	
31065-MP	ArduCAM Camera Shield	\$39.95	

PI GPIO BREAKOUT

Breakout Board & Solderless Breaboard
Kit Includes: 830 Tie Point Solderless Breadboard, "T" shaped PC Board that plugs into the Breadboard & 7in long, 40pin ribbon cable.
Breaks Out 5V, 3.3V & Gnd as well as 28 GPIO signals: P0-7, P21-29, CE0&1, SCK, MOS1, MISO, RX0, TX0, SDA, SCL, SD, SD to the solderless breadboard to provide for easy access to the I/O lines and Power on the Raspberry controller.
Peel-n-stick backer on Breadboard.
LED indicator for 5V power "ON"

"T" Board: L: 2-3/16"	W: 2-5/16"	H: 3/4"	WT: .35
STOCK #	DESC.	1EA	
33050-MP	Raspberry-Pi GPIO Extender	\$1.95	

RASPBERRY-PI 2 ALUMINUM CASE

Heavy Duty protective Case, Fan & Power Supply
Industrial aluminum case for Raspberry-Pi 1B+ & Pi 2.
Case designed for End Use Applications in equipment, field, or factory. Micro fan mounts in case with double side tape and connects to 5V & ground on the Pi GPIO header.
Slot in case for I/O port wiring.
USB Ports, Network, A/V & HDMI ports available through case.
Notes:
You cannot connect a 40 Pin Breakout Cable & the fan at the same time.
S/D card Slot is not available through the case
Set includes: Case, Micro Fan and 5V, 4A Power Supply.
L: 4-1/16" W: 2-11/16" H: 1-5/8" WT: .8

STOCK #	DESC.	1EA
32593-MP	Raspberry-Pi 2 H/D Case	\$24.95

RASPBERRY-PI CAMERA MODULE

5M PixelCamera for Model A or B
High-definition OmniVision CMOS camera for the Pi controller. Uses the dedicated CSI camera connector on the top of the Pi. Built-in IR filter. Automatic White Balance, Exposure Control & Black Level calibration. Snapshot or Video operation. Many programmable features. Supported by the latest version of Raspbian (Preferred O/S).
Power: (From Pi) 1.5V core onboard regulator
Resolution: 2592X1944 Still
Pixel Size: 1.4um X 1.4um
Supports: 1080P@30fps, 720P@60fps, 640X480P@60/90fps.
Lens mount: M12X0.5
Lens: 3.2mm/f2.0 FOV: Horiz: 63.7/Vert: 70deg.
4 corner mtg. holes.
Includes 10in. flat cable for connection to Raspberry-Pi
L: 1-13/32" W: 1-13/32" H: 7/8" WT: .08

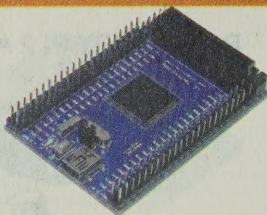
STOCK #	DESC.	1EA
31178-MP	Raspberry Pi Camera	\$29.95

CAMERA MODULE/CS LENS

5M Pixel Camera for Raspberry-Pi Model A or B
Give your robot sight with this High-definition OmniVision 1/4" CMOS camera with CS mount 6mm lens for the Pi con- troller. Uses the dedicated CSI camera connector on the top of the Pi. Built-in IR filter. Automatic White Balance, Exposure Control & Black Level calibration. Snapshot or Video operation. Many programmable features. Supported by Rasp- bian (Preferred O/S).
Sensor: OV5647
Power: (From Pi) 1.5V core onboard regulator
Resolution: 2592X1944 Still
Pixel Size: 1.4um X 1.4um
Supports :1080P@30fps, 720P@60fps, 640X480P@60/90fps.
Lens mount: CS
Lens:6mm/F1.4
4 corner mtg. holes
Includes 5in. flat cable for connection to Raspberry-Pi
SQ.: 1-7/16" H: 1-3/8" WT: .1

STOCK #	DESC.	1EA
31497-MP	Pi Camera with CS Lens	\$34.95

ARM CORTEX DEVELOPMENT BOARD



Mini Core Development Board for ARM Microcontrollers
Designed with the STMicroelectronics STM32F103VBT6, ARM® Cortex® M3 processor for embedded systems. It provides a low-cost solution with a lower pin count and low-power consumption. The 32-bit RISC processor features high code-efficiency, and high-performance with reduced memory requirements. The STM32F103VBT6 is compatible with all ARM tools and software.

Board Features:

Power: 5V with On-board 3.3 regulator

LED Power Indicator

Compact Size:

JTAG 20 Pin Connector

USB Micro B Connector

Dual 22 X 2 Pin 0.1" Pitch GPIO Headers with Gnd & 3.3V Pins

Serial Port: 4 Pin 0.1" Pitch Header

Reset P/B switch

CPU Features:

Memory: Flash: 128K

SRAM: 20K

GPIO: 80

Comm: USB

Dual SPI

Dual I2C

3 Serial (USART)

CAN

ADC: Dual 16 Channel 12 Bit

NOTE: This is a Development Board that requires you to write & install Software to fit your application/use

We cannot help you with this.

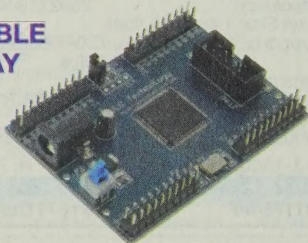
ST Microsystems (www.st.com) and various ARM User groups can provide some guidance.

See our website: www.mpja.com for Manuals & Links

L: 2-11/16" W: 1-13/16" H: 1/2" O/A WT: .04

STOCK #	DESC.	1EA
32691-MP	32F103 ARM Development Board	\$18.95

PROGRAMMABLE LOGIC ARRAY BOARD



Demo/Learning/Prototype Board for Programmable Logic Devices using the MAX II EPM240 Altera CPLD Chip. Ideal for prototyping dedicated controllers etc.

The CPLD (Complex Programmable Logic Array) has the following features:

Instant-on, non-volatile architecture

Reprogrammable: Yes

MicroCells: 192

Logic Array Blocks: 24

Logic Elements: 240 (10/LAB)

I/O Lines: 80 Programmable Bi-directional

I/O Levels: 1.5 to 3.3V supported

I/Os are fully compliant with the Peripheral Component

Interconnect Special Interest Group (PCI SIG) PCI

Local Bus Specification, Revision 2.2 for 3.3-V

Memory: 8K user

Clock: 50.000MHz onboard Osc.

Supply V: 5VDC (Onboard 3.3V Regulator)

I: <60mA (Use dependent)

10 Pin JTAG test header

Alternate Action Power Switch

5.5/2.1mm Coaxial Power Jack

NOTE: This is a logic array that requires you to configure the internal logic and I/O to your needed configuration.

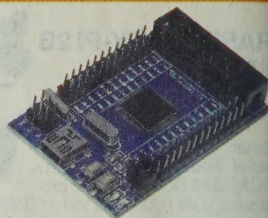
We cannot help you with this

Programmable using Byte Blaster, USB Blaster & Others

L: 2-3/4" W: 2" H: 3/4" WT: .06

STOCK #	DESC.	1EA
32690-MP	EPM240 CLPD Tasking Board	\$19.95

ADVANCED ARM DEVELOPMENT BOARD



Mini Core Development Board for ARM Microcontrollers
Designed with the STMicroelectronics STM32F405RGT6, ARM® Cortex® M4 advanced processor for embedded systems. It provides a low-cost solution with a lower pin count and low-power consumption. The 32-bit RISC processor features high code-efficiency, and high-performance with reduced memory requirements. Many embeded functions. The STM32F405RGT6 is compatible with all ARM tools and software.

Board Features:

Compact Size

Power: 5V with On-board 3.3 regulator

LED Power Indicator

LED ??? Indicator

JTAG 20 Pin Connector

USB Micro B Connector

Dual 24 X 2 Pin 0.1" Pitch GPIO Headers

2 X 3 Pin 0.1" Pitch Gnd & 3.3V Header

Reset P/B switch

Test P/B Switch

CPU Features:

Memory: Flash: 1024K

SRAM: 192K

GPIO: 51

Comm: USB

3SPI

Dual I2S

Dual I2C

4 Serial (USART) 2 Serial (UART)

Dual CAN

ADC: 3 16 Channel 12 Bit

DAC: Dual 12 Bit

Timers: 10 General Purpose 16 Bit + Dual 32 Bit

Real Time Clock

Random # Generator

Single Precision Floating Point Unit

NOTE: This is a Development Board that requires you to write & install Software to fit your application/use

We cannot help you with this.

ST Microsystems (www.st.com) and various ARM User groups can provide some guidance.

See our website: www.mpja.com for Manuals & Links

L: 2-1/4" W: 1-1/2" H: 1/2" O/A WT: .04

STOCK #	DESC.	1EA
32703-MP	32F405 ARM Development Board	\$29.95



USB-BLASTER™ SMART CABLE

Compatible USB-Blaster™ Download Cable interfaces a USB port on a host computer to an Altera® FPGA/CPLD mounted on a printed circuit board. The cable sends configuration data from the PC to a standard 10-pin header connected to the FPGA/CPLD. You can use the USB-Blaster cable to iteratively download configuration data to a system during prototyping or to program data into the system during production. Ideal for prototyping dedicated controllers etc.

Supports:

Altera CPLD/FPGA Devices series: MAX, FLEX, APEX, EPC

See mpja.com Support Files for list

Supply V: 5.0 V from the host USB cable

Between 1.5 V and 5.0 V from the target circuit board

Includes: USB Blaster, 11in. 10pin Target cable, 4ft. USB Host Cable

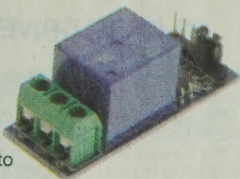
NOTE: This is a logic array programmer that requires you to download Software (Recommend free Quartus II) from Altera (link on mpja.com).

We cannot help you with this item.

L: 2-3/4" W: 2" H: 3/4" WT: .2

STOCK #	DESC.	1EA
32701-MP	USB Blaster FPGA/CLPD Downloader	\$10.95

SINGLE RELAY BOARD



Single Relay module for any project. Easily driven by an Arduino or other micro controllers. Opto Isolated Input.

Freeware available through www.arduino.cc.en & others

LED indicates Relay activated.

Selectable +5V or Ground on Input to Actuate Relay

Power: 5VDC @ ~90mA energized

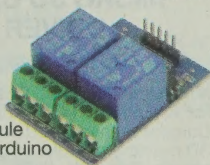
Contacts: SPDT 10A @ 28VDC,30VDC,125VAC,250VAC

Input: .1in. pitch header with Vcc, Gnd, and Input

Output: Terminal strips.

L: 1-13/16"	W: 11/16"	H: 3/4 "	WT: .02
STOCK #	DESC.	1EA	
32574-MP	uController Relay Board	\$2.95	

5V DUAL RELAY BOARD



Opto Isolated input, Dual Relay module for any project. Easily driven by an Arduino or other micro controllers.

Freeware available through www.arduino.cc.en & others

LED indicators for input activity.

Power: 5VDC @ 80mA/channel energized

Select either Power from CPU or external.

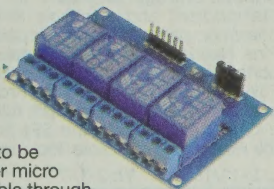
Input: .1in. Pitch header with Vcc, Gnd, and Input

Ground energizes relay(s)

Output: Terminal strips

L: 1-13/16"	W: 1-5/16"	H: 3/4"	WT: .06
STOCK #	DESC.	1EA	
32707-MP	5V uController Dual Relay Board	\$3.95	

QUAD RELAY BOARD



Quad relay board designed to be driven by an Arduino or other micro controllers. Freeware available through www.arduino.cc.en & others on-line

LED indicators for power & each input.

Boards are Opto isolated with a jumper to use a separate Isolated

+5 & ground for relay power

Power: 5VDC

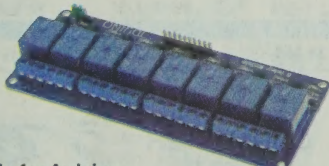
Input: .1in. header with Vcc, Gnd, and an input pin for each relay.

Contacts: SPDT 10A @ 28VDC,30VDC,125VAC,250VAC

Output: Terminal strips.

L: 3"	W: 2-3/16"	H: 3/4 "	WT: .12
STOCK #	DESC.	1EA	
31305-MP	uController Quad Relay Board	\$7.95	

8 RELAY BOARD



8 SPDT Relay Module for Arduino

8 independent SPDT Relays designed to be driven by an Arduino or other micro controllers. Low on input activates Relay

Freeware available through www.arduino.cc.en & others.

LED indicators for each relay

All relays are Opto isolated.

Power: 5VDC@<40mA each.

Selectable common or independent Relay Power

Input: .1in. header with Vcc, Gnd, and an input pin for each relay.

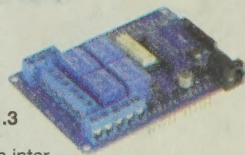
Contacts: SPDT 10A @ 30VDC, 250VAC

Output: Terminal strips for contacts

4 corner mounting holes

L: 5-7/16"	W: 2-1/4"	H: 3/4"	WT: .26
STOCK #	DESC.	1EA	
33329-MP	Micro Controller 8 Channel Relay	\$10.95	

SUPER SHIELD RELAY BOARD



Quad Relay Super Shield V1.3 for Arduino

Super Shield smart module with interface for XBEE/BLUETOOTH BEE modules and 4 high quality relays providing independent SPDT switching. LED indicates status of each relay.

Power: 7-12VDC on-board 5.5X2.1mm coaxial jack

Contacts Rated: 1A, 250VAC, 3A/120VAC/24DC.

Terminal strips for relay contacts.

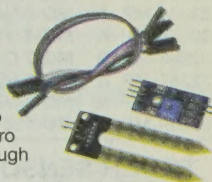
Standardized shield board compatible with the Arduino I/O Pins.

Digital ports 2,3,4 & 5 for relays, 0 & 1 for wireless modules

[Caution:] Place 2 layers of electrical tape over USB connector on Arduino Board to prevent inter board short

L: 3-1/8"	W: 2-3/16"	H: 1"	WT: .15
STOCK #	DESC.	1EA	
31300-MP	Quad Relay Super Shield	\$14.95	

MOISTURE SENSOR



A simple adjustable comparator circuit using a LM393 IC to detect water continuity in soil. Designed to interface to a Arduino or other micro controllers. Freeware available through www.arduino.cc.en

Power: 3.3-5VDC

Input: 2 Pin header for connection to sensor board

Outputs: TTL Compatible Digital

Feed through of Analog Input

4 Pin .1in Header pins for Power & Outputs

LEDs for 5V Power and Output status indication.

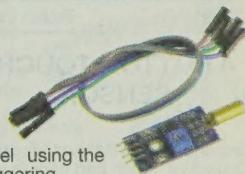
Comparator Board: 30mm X 16mm

Sensor Board: 55mm X 20mm

Set includes Both Boards & 6in. Interconnect jumpers.

L: 2"	W: 1-3/16"	H: 9/16"	WT: .02
STOCK #	DESC.	1EA	
30282-MP	Micro Controller Moisture Sensor	\$6.95	

TILT SENSOR



Arduino Tilt Sensor

Arduino powered board with

adjustable trigger sensitivity level using the

LM393 IC to eliminate False triggering.

LED for Power & an LED for Tilt Detection.

Power: 3.3-5.5VDC

Approx Trip angle 45degrees

Outputs: Analog: Direct Switch output

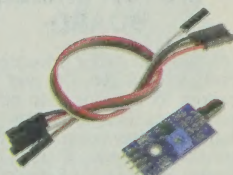
:Digital: Debounced Comparator Output.

4 Pin I/O header.

4pcs. 20cm Interconnect Jumpers.

L: 1-3/4"	W: 9/16"	H: 1/4"	WT: .02
STOCK #	DESC.	1EA	
31071-MP	Tilt Sensor Board	\$3.95	

FLAME SENSOR



Arduino I/R Flame Sensor

Arduino powered board with

adjustable trigger sensitivity level

using the LM393 IC.

LED for Power & an LED for flame

Detection.

Detection Range: 760-1100nm (Low I/R)

Power: 3.3-5.5VDC

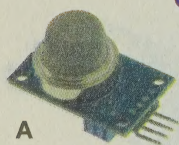
Outputs: Analog: low level dependent on I/R Source

:Digital Low for detected Flame/Heat above setting.

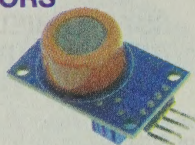
4 Pin I/O header.

L: 1-1/4"	W: 9/16"	H: 1/2"	WT: .02
STOCK #	DESC.	1EA	
31074-MP	Flame Sensor Module	\$3.95	

GAS SENSORS



A



B

State of the art MQ-Series gas sensor coupled with A simple adjustable comparator circuit using a LM393 IC. Detects hazardous/ combustible Vapors in the air. Simple 4 pin connections. Designed to interface to an Arduino or other micro controllers. Freeware available through www.arduino.cc/en and other web sites. SEE ONLINE DATA FOR MORE INFORMATION

Power: 5VDC

Outputs: TTL Compatible Digital & Analog
4 Pin .1in Header pins for Power & Output
LED for Output status indication.

Board: 32mm X 18mm

WT: .02

STOCK #	STYLE	DESC.	1EA
32361-MP	A	MQ-2 Combustable Gas Sensor	\$4.95
32362-MP	B	MQ-3 Ethanol Alcohol Sensor	\$4.95
32363-MP	A	MQ-4 Methane Gas Sensor	\$4.95
32364-MP	A	MQ-5 Natural Gas Sensor	\$4.95
32365-MP	A	MQ-6 Propane-Butane Sensor	\$4.95
32366-MP	B	MQ-7 Carbon Monoxide Sensor	\$4.95
32367-MP	A	MQ-8 Hydrogen Gas Sensor	\$4.95
32368-MP	A	MQ-9 Methane-Propane Sensor	\$4.95
32369-MP	A	MQ-135 Air Quality Sensor	\$6.95

TOUCH SENSOR

Arduino Touch Sensor Module

Arduino powered sensor for detecting finger touch. When touched; sensor Output switches to a High. Output will remain high for 100+seconds before resetting if touch is maintained.

Power: 2-5.5VDC

CMOS Output Transistor:

Voh: .8VDC, 0.6Vtp, at Vcc=3V, Sink load of 8mA

Vol: .3V Source 4mA

3 Pin I/O header. Power LED

L: 15/16" W: 15/16" H: 3/16" WT: .005

STOCK #	DESC.	1EA
31301-MP	Touch Sensor Board	\$3.95

4 BUTTON TOUCH SENSOR

Arduino Touch Sensor Module

Capacitive Touch pad sensor with 4 Positions utilizing the TTP224 Touch Sensor

Power: 2.4-5.5VDC Onboard regulator

CMOS Output: Timed or Toggle, Active High or Active Low

Jumper field for adjusting modes.

Response Time: 60ms fast mode or 160ms in Low power

6 Pin I/O header.

Output Pin & Status LED for each output

L: 1-3/8" W: 1-3/16" H: 1/2" WT: .02

STOCK #	DESC.	1EA
31576-MP	4 input Touch Sensor Board	\$5.95

MOTOR SHIELD BOARD

Full featured motor drive board for connecting Servo, DC and Stepper motors to a Arduino or other micro controllers. Plugs directly onto UNO controller. Freeware available through www.arduino.cc/en and others.

Power: 5VDC Logic. External Motor 4.5-15V

Input: (.1") headers for direct connection to Arduino

Outputs: .1" headers for 2 Hobby 5V Servos

Terminal Strips for: 4 L293D "H" bridge @ .6A/bridge

Drives: 2 Bi or Uni-Polar Step Motors, 4/5/6/8 wire

or 4 DC motors.

Compatible with Mega 1280/2560, UNO, Duemilanova & Diecimila.

L: 2-5/8" W: 2-1/8" H: 1/2" WT: .14

STOCK #	DESC.	1EA
30292-MP	uController "Motor Shield"	\$10.95

SD CARD DRIVER

SD Card Reader/Writer for Arduino ARM Controllers

Compact sensor sized board for reading & writing SD/TF memory modules.

2 X 8 header with .1in pitch (row 2 connected in parallel to Row 1). All SD SPI signals (CS, SCK, MISO, MOSI) available on header for easy connection to all Arduino, Raspberry-PI & others.

Power: 3.3 & 5V (onboard 3.3V regulator)

Information & Freeware available through

www.arduino.cc/en and others on-line.

L: 2" W: 1-1/4" H: 9/16" O/A WT: .02

STOCK #	DESC.	1EA
31491-MP	SD Card Reader/Writer	\$2.95

MICRO SD CARD DRIVER

Mini-Micro SD Card Reader/Writer for Arduino ARM Controllers

Compact sensor sized board for reading & writing Mini & Micro SD memory modules. 6 pin header with .1in pitch. All SD SPI signals (CS, SCK, MISO, MOSI) available on header for easy connection to all Arduino, Raspberry-PI & others.

Power: 3.3V

Information & Freeware available through

www.arduino.cc/en and others on-line.

L: 25/32" W: 11/16" H: 1/2" O/A WT: .01

STOCK #	DESC.	1EA
31570-MP	Micro SD Card Reader/Writer	\$1.95

SD SHIELD BOARD

Arduino Storage Module

Standardized and stackable shield board compatible with the Arduino I/O Pins. Need more storage? Module supports

SD <16G, SDHC <16G and uHD <2G.

Fully compatible with existing Arduino SD card software library. Accepts full size & includes adapter for microSD cards. Uses the SPI port to communicate leaving the Arduino I/O available. Includes Grove UART & I2C ports.

L: 2-11/16" W: 2-1/8" WT: .1

STOCK #	DESC.	1EA
30428-MP	Seeeduino SD Card Shield V4	\$14.90

RS232 TO TTL MODULE

RS232 to TTL serial port converter module designed around the MAX3232 chip. Used with microcomputers for expansion of serial ports.

Power 3.3 or 5VDC from microcontroller or power supply.

L: 1-3/4" W: 1-1/4" H: 5/8" WT: .02

STOCK #	DESC.	1EA
31943-MP	RS232 to TTL Converter	\$3.50

USB/TTL CONVERTER CABLE

USB-TTL Module provides Support for USB 1.1/2.0 to TTL devices. Full Duplex asynchronous serial device to a USB host. Upgrade RS232 to USB

Supports Windows® up through 7, linux 2.4 & up.

Chip: Prolific PL-2303HX-A Bridge controller

Power: 5V From Host

Connections: 36" cable with 4 single Pin headers for connection to TTL devices

USB 2.0 Type A Male for Computer

Drivers available at: www.Prolific.com.tw

L: 36" WT: .04

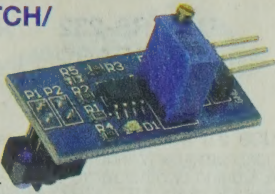
STOCK #	DESC.	1EA
33006-MP	TTL- USB Interface Cable	\$4.95

REFLECTIVE SWITCH/ DETECTOR

Arduino I/R Reflective Switch Module

This module uses an infrared sensor containing an emitter along with a detector to sense objects or surfaces. The I/R receiver is connected to a LM393 voltage comparator with adjustable sensitivity control (R6). Module has a LED indicator that turns on when it receives a reflection from the IR emitter. The output can be connected directly to a micro-controller I/O port. Ideal for line following robots, collision avoidance & counting passing objects. Power: 3.3V to 5VDC Supply Current: < 40mA (LED off) Sense Range: 10-30+ Depending on reflectiveness of object Sense Angle: ~ 20° Output: Digital TTL Open Collector Current sink 20mA 3 Pin .1in. Pitch Header for Power & Output

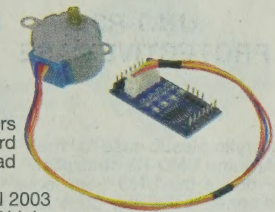
L: 1-1/4"	W: 5/8"	T: 1"	WT: .02
STOCK #	DESC.	1EA	
31590-MP	I/R Reflective Switch	\$2.95	



MINI STEPPER & DRIVER

Designed for Micro-controllers Combination of driver board & a small NEMA 11 gearhead Stepmotor. Driver Board utilizes the ULN 2003 C. (www.ti.com) containing 7 high current drivers all brought out to a Output header. Outputs 1-4 are also connected to the motor header & Has four LED activation indicators on outputs (A - D) for motor phase. Motor: P/N 28BYJ-48 Coil: Unipolar/5 Lead, 200 ohm Step: .0879deg/step (5.625 Deg/step , 1/64 ratio) Rate: 500pps max Hold Torque: >350g-cm 20mm long X 28mm Dia. with 5mm dia. double "D" X 9mm brass shaft. 8" motor leads, 2 mounting ears Board: All Outputs available on additional header. Header for selecting internal/external Motor power. Power: 5-12VDC Drive Current: 300mA/Peak 500mA Signal: TTL logic 7 Pin .1in. Pitch Headers for Input & Output 5 Pin XH-5P socket for connection to Motor 4 Pin .1in. Pitch Header for Power Set Includes: Freeware available at arduino.cc.en and others.

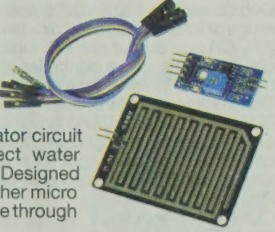
L: 1-5/8"	W: 7/8"	H: 1/2"	WT: .09
STOCK #	DESC.	1EA	
31592-MS	Stepmotor with Driver Board	\$4.95	



RAIN SENSOR

A simple adjustable comparator circuit using a LM393 IC to detect water droplets on detector board. Designed to interface to a Arduino or other micro controllers. Freeware available through www.arduino.cc.en Power: 3.3-5VDC Input: 2 Pin header for connection to sensor board Outputs: TTL Compatible Digital Feed through of Analog Input 4 Pin .1in Header pins for Power & Outputs LEDs for 5V Power and Output status indication. Comparator Board: 30mm X 16mm Sensor Board: 54mm X 40mm Set includes Both Boards & 6in. Interconnect jumpers.

L: 1-5/8"	W: 7/8"	H: 1/2"	WT: .02
STOCK #	DESC.	1EA	
30283-MP	Micro Controller Rain Sensor	\$6.95	



MICRO SERVO MOTOR

Servo Motor for Arduino, Raspberry-Pi Robotics

Mini servo for robotics & modeling. Nylon gears for smooth quiet operation. Rated: Op. Voltage 3.5-6VDC, Stall Torque: 1.2kg/cm @ 4.8V, 1.6kg/cm @ 6V, Speed: 300Deg/Sec (60/.12sec.), Dead Bandwidth: 5us. Futaba/JR connector on 9in. cable.

L: 23mm	W: 12mm	T: 29mm	WT: .02
STOCK #	DESC.	1EA	
31002-MD	6V Micro Servo Motor	\$5.95	

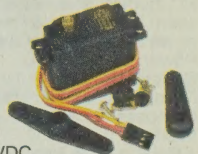


ROBOTICS SERVO MOTOR

Servo Motor for Arduino, Raspberry-Pi Robotics

Heavy duty mini servo with metal gears for robotics. Rated: Op. Voltage 5-7.2VDC, Stall Torque: 7kg/cm @ 4.8V, 10+kg/cm @ 6V, Speed: 360Deg/Sec (60/.15sec.), Dead Bandwidth: 5us. 12in. cable with Futaba/JR connector.

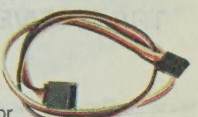
L: 2-1/8" O/A	W: 3/4" O/A	H: 1-1/2"	WT: .14
STOCK #	DESC.	1EA	
31150-MP	6V Servo Motor for Robotics	\$7.95	



3 PIN SERVO EXTENSION CABLE

NON-POLARIZED Ribbon cable with 0.10" pitch, 3 position Socket connector on one end and 3 Pin Male connector on the other end. Socket accepts .025" round or square pins, Males are .025" Sq. Pins.

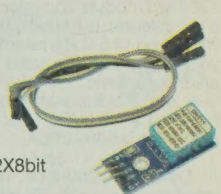
L: 50cm (19")		WT: .01
STOCK #	DESC.	1EA
31498-CB	50CM Servo Extension Cable	\$1.29



HUMIDITY SENSOR

A selfcontained Temperature & humidity sensor on a board designed to interface to a Arduino or other micro controllers. Freeware available through www.arduino.cc.en Data: 40bit serial: 2X8bit Humidity + 2X8bit Temp. + 8bit Checksum Power: 3.3-5VDC 3 Pin Interface & Power SPI single line data line. TTL compatible Temp: Range: 0-50°C Humidity Range: 20-90% RH Sensor Board: 35mm X 15mm Set includes Board & 6in. Interconnect jumpers.

L: 1-5/8"	W: 7/8"	H: 1/2"	WT: .02
STOCK #	DESC.	1EA	
30287-MP	Microcontroller Humidity Sensor	\$5.95	

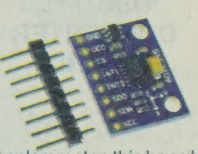


3 AXIS ACCELEROMETER SENSOR

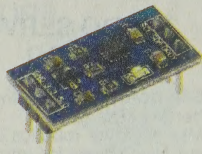
Add an Accelerometer to Arduino & Microcontrollers

Designed for the ADXL345 triple axis accelerometer, this board supplies raw 16bit 2's complement data to a microcontroller through a SPI or I2C interface. Features Tap/Double Tap and Free fall detection. Freeware available from arduino.cc.en, youtube & the many forums. NOTE: Header requires soldering Power: 3-5VDC 40uA operating. Output: 3 or 4 Wire SPI or I2C Range: Select +2, +4, +8 or +-16G Resolution: 13bit/4mg/LSB Connections: 8 Pin (.1") Input header for connection to power & uController

L: 3/4"	W: 5/8"	H: 1/2" (Header)	WT: .01
STOCK #	DESC.	1EA	
31163-MP	3 Axis Accelerometer	\$4.95	



3 AXIS COMPASS



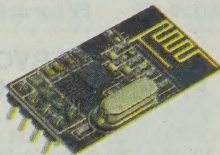
Arduino 3 Axis Digital Compass Module

A 3 axis (XYZ) digital compass/magnetometer using Honeywell's HMC5583L sensor. Can detect magnetic fields from + to -8 Gauss, with milli-gauss resolution. As a compass, you can expect a 1-2 degree heading accuracy. Fast, up to 160 readings per second are possible. As a magnetometer can detect large masses of ferrous metals (iron), small magnets, electromagnetic fields, even currents in wires. Interface is standard I2C, the module has built-in pull up resistors on the SDA and SCL lines. On board 3.3 volt regulator allows use on 3.3 or 5Volt micro controllers. Wide uses in navigation, robotics, RC models, science, even as a driveway automobile detector alarm. Information & Freeware available through www.arduino.cc and others on-line.

Power: 2.7 - 5.5VDC
Current: 100uA
Resolution: < 4.35 milligauss
Compass Accuracy: 1 - 2 degrees
Interface: 2-wire I2C
4 Pin .1in Pitch Header for Power & Input
DIM: 1.0 x 0.5in (25mm x 12mm)

L: 1"	W: 1/2"	H: 1/2"	WT: .02
STOCK #	DESC.	1EA	
31585-MP	3 Axis Compass-Magnetometer	\$4.95	

WIRELESS TRANSCEIVER



Wireless Data Transceiver for Arduino Type Controllers

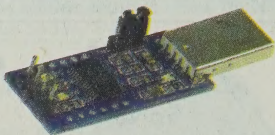
High speed, low power, 2.4GHz, radio data transceiver module. Based on the NRF24L01+ RF IC. It is capable of transmitting and receiving data at up to 2Mbps over 126 ISM band channels. Multiceiver design allows up to 6 channels. 3 level 8bit FIFO for both Tx. & Rx registers. 8bit command word. Super low power in power Down mode (less than 1uA). Communicates up to 200 feet in open air, less in enclosed spaces. Interface between module and micro-controller is 4 wire SPI. Inputs are 5 volt tolerant, but supply voltage is 3.3 volts maximum. Can be interfaced to 5 volt systems with 3.3v regulators. Interconnect your world. Multiple uses in robotics, remote data collection, alarms, toys etc.

See: <http://arduino.info.com/Nrf24L01-2.4ghz-HowTo>
Power: 1.9 - 3.3VDC Max
Current: Standby 26uA

TX Current 11.3mA RX Current 13.5mA
Air Data Rate: 250kbps, 1Mbps, 2Mbps selectable
Interface: 4-pin SPI (5V tolerant)
RF 2.4GHz ISM Band - 126 programmable channels
RF TX Power: Programmable 0, -6, -12 or -18dBm
Range 200ft Max open air line of sight
8 Pin (2X4) .1in Pitch Header for Power & Input
Requires a pair for minimum Operation

L: 1-3/16"	W: 5/8"	H: 1/2"	WT: .02
STOCK #	DESC.	1EA	
31572-MP	Wireless Data Transceiver	\$3.95	

USB/TTL CONVERTER BOARD



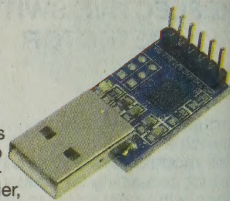
USB-STC-ISP Module provides Support for USB 1.1/2.0 to TTL devices. Full Duplex asynchronous serial device to a USB host. Upgrade RS232/422/485 to USB Supports Windows® up through 7, linux 2.4 & up. Chip: FTDI FT232RL Bridge controller
Power: 5, 3.3VDC From Host
Selectable 5 or 3.3V out for external Logic
Connections: 2 X .1" pitch holes for CBUS0-4, Reset DTR, RTS, DSR, DCD, RI, CTS

4 Pin (.1") header for connection to TTL devices
USB 2.0 Type A Male

LEDs for Power, Rx & Tx
Drivers available at: www.ftdichip.com

L: 2-1/16"	W: 11/16"	H: 1/2"	WT: .02
STOCK #	DESC.	1EA	
31573-MP	uController USB Interface	\$3.95	

USB/RS-232 MINI BOARD



USB 2.0 Mini module connects host computer (Windows Linux) to a Arduino or other micro controllers. On chip UART, USB Controller, Full Duplex asynchronous serial device to a USB host. Upgrade RS232 to USB. Supports Windows® up through XP, linux 2.4 & up. Chip: Silicon Labs CP2102
Power: 5, 3.3VDC
Baud Rate: 300BPs to 1.0MBps
Connections: 6 Pin (.1") header for TXD, RXD, RST, 3.3V, 5V & Gnd.

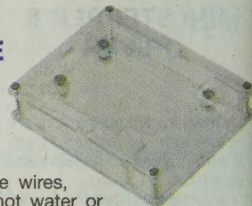
Holes for 2X3 (.1 pitch) additional headers for RI, DCO, DTR, DSR, RTS & CTS
USB 2.0 Type A Male

LED for Power.

Freeware available through www.arduino.cc and others.

L: 1-17/32"	O/A	W: 5/8"	H: 1/2"	WT: .02
STOCK #	DESC.	1EA		
31575-MP	Mini USB/RS-232 Interface	\$4.95		

UNO-R3 PROTECTIVE CASE



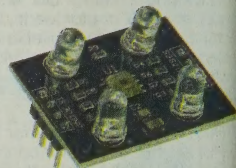
Acrylic plastic case for the Arduino UNO-R3 controller.

Protects the UNO from loose wires, dropped parts etc. Case is not water or dust proof. Holes & slots allow access to all UNO connections. Includes Hardware.

ASSEMBLY REQUIRED
UNO NOT INCLUDED

L: 3"	W: 2-7/16"	H: 7/8"	WT: .1
STOCK #	DESC.	1EA	
32182-MP	UNO Protective Plastic Case	\$2.95	

COLOR DETECTOR



Arduino Color Recognition Sensor Module

Designed around 4 White LEDs and the TAOS TCS230 sensor IC. The four white LED's to provide a broad spectrum light source. The TCS230 has an 8 x 8 array of photodiodes with color filters (16 Red, 16 Blue, 16 Green, 16 Clear). A light to frequency converter generates a 50% duty cycle square wave on the output pin. Frequency is directly proportional to light intensity. Output scaling 100%, 20% and 2% allows for wide dynamic range of intensities. The color selects (S2, S3), frequency scale (S0, S1) and output are TTL logic level and can be connected directly to the micro controller. Basic readings are easy using the Arduino "pulsein" command. Take a reading for each color. The reading with narrowest pulse width or highest frequency is the major color. Using advanced ratio analysis almost any color could be recognized. Multiple uses by adding lenses, color filters, different light source.

Check out: www.arduino.cc and others.

Power: 2.7 - 5VDC

Current: >30mA @ 5V

Input: TTL Logic Levels

Sensor Bandwidth: ~ 400 - 950nm

Output: TTL Level Square Wave (50% Duty Cycle)

~2Hz max Dark/24KHz Max,

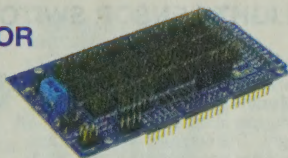
Intensity/Color Dependant SEE DATA SHEET

NOTE: The OE pin (Output Enable) is grounded through R8 (0ohm), making the module enabled by default. Do not connect the OE to the micro controller, unless R8 is removed or changed to 4.7K or greater.

Dual 4 Pin .1in Pitch Headers

L: 1-1/4"	W: 15/16"	H: 3/4"	WT: .03
STOCK #	DESC.	1EA	
31582-MP	Color Intensity Detector Module	\$7.45	

MEGA I/O SENSOR SHIELD V2.0



Mega Atmega 1280/2560 Compatible

Get more out of the MEGA with this Shield designed for easy connection of sensors to all 70 of the analog and digital pins. Each connector has separate +5 volts and ground contacts. Additionally 5 special purpose connectors are provided for ICSP port, APC220 wireless module, Bluetooth wireless module, SD card interface, Ultrasonic module. Power supplied from the MEGA or jumper selectable external source. Shield also includes Reset Button, Power LED, I/O pin D13 LED.

[Input/Output Connectors]

16 Analog 54 digital

1 for APC220 wireless module

1 for Bluetooth wireless module

1 for SD card interface module

1 ICSP Port

1 External +5 volt power terminal strip (Jumper Selectable)

L: 3-7/8" O/A W: 2-1/8" H: 3/4" WT: .1

STOCK #	DESC.	1EA
31060-MP	MEGA 2560 Sensor Shield	\$12.95

WIFI SHIELD



Arduino WiShield V2.0

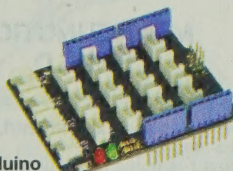
WiFi Shield

Wi-Fi Shield for Arduino controllers is designed around the Microchip MRF-24WB0MA Module to give 802.11b capability. Supports both BSS & IBSS wireless networks. Connects to Secure authentication WEP-64 & 128, WPA/WPA2-PSK. 1 & 2 Mbps throughput speeds. Standardized and stackable shield board compatible with the Arduino I/O Pins. Uses the Tx & Rx pins on the controller. Uses SPI for host communications <25MHz.

L: 1-7/8" W: 2-1/8" WT: .04

STOCK #	DESC.	1EA
31056-MP	WiFi Shield	\$74.95

BASE SHIELD BOARD



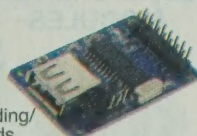
Grove Break-out Board for Arduino

Base shield board simplifies connection in the Grove environment. Arduino pins are brought to 4 Pin JST sockets. Each JST provides 2 Signal Pins, A Ground Pin & a Vcc Pin. You have 4 available I2C connectors, 4 Analog connectors, 7 Digital connectors and 1 UART connector. The UART connector comprises Arduino's Digital0 & Digital1 while D2-D8 Port duplicates ports in a staggered manner: D2=Digital2 & Digital3/D3= Digital3 & Digital4/.../D8=Digital8 & Digital9. The Analog Pins are treated the same A0=Analog0 & Analog1/ A1=Analog1 & Analog2 etc. The SPI Header is fed through only as there are no Grove modules that use it. Standardized and stackable shield board compatible with the Arduino I/O Pins.

L: 2-11/16" W: 5/8" WT: .1

STOCK #	DESC.	1EA
30444-MP	Seeeduino Grove Base Shield	\$9.90

USB DISC MODULE



USB to FAT File System Control Module for Arduino

Controller/interface for USB Storage devices using the CH376 IC. For reading/writing USB drives, SD & HC-SD cards. Supports 3 mode of communication: 8-bit parallel, SPI, or async. serial.

Power: 5VDC (on board 3.3V regulator)

File System: FAT12, FAT16 & FAT32

Interface: SPI, Parallel, Serial

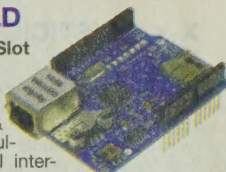
Connectors: MPU: 8 X 2 Pin .1in. Pitch Header

Device: USB Type 1 Male

L: 1-7/8" W: 1-1/8" H: 1/2" WT: .02

STOCK #	DESC.	1EA
31813-MP	USB Disc Module	\$12.95

ETHERNET SHIELD



Ethernet Shield with Micro SD Slot for Arduino

Compact LAN Shield using the Wiznet W5100 chip providing IP stack and capable of both TCP & UDP. Shield supplies up to 4 simultaneous socket connections. SPI interface for communication to Arduino. Can be server or client. Micro SD card slot for file storage.

Note: the W5100 & SD card share the SPI bus, only one can be active. You must disable the one you are not using. RJ jack mounted Green & Yellow LEDs

Power: 3.3/5VDC from microcontroller

Communicates using the SPI interface (Arduino Pins 10-13)

Digital I/O : Feed through: same as controller

Analog Input: Feed Through: same as controller

LEDs: 7: TX, TX, Coll, FullID, 100M, Link & Power

Supports up to 4 Sockets

Compatible with the Duemilanove (168/328), Uno and Mega (1280/2560)

MAC address: 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED byte mac[] = {0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED }

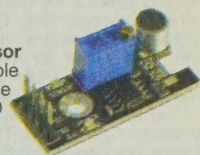
Supported by Arduino Ethernet library.

Supported by Arduino SD library

L: 2-3/4" W: 2-1/8" H: 1-1/16" WT: .06

STOCK #	DESC.	1EA
31054-MP	Micro Controller Ethernet Shield	\$19.95

SOUND SENSOR



Arduino Analog/Digital Sound Sensor

Arduino powered board with adjustable audio trigger sensitivity level using the LM393 IC. LED for Power & an LED for Detection.

Power: 3.5-5.5VDC

Outputs: Analog: low level audio

Digital Low for detected sound above setting.

4 Pin I/O header.

L: 1-1/4" W: 9/16" H: 1/2" WT: .02

STOCK #	DESC.	1EA
31072-MP	Sound Sensor Board	\$3.95

BUZZER MODULE



Compact buzzer module with transistor driver to protect I/O pins from overloading. Designed to interface to a Arduino or other micro controllers. Freeware available through www.arduino.cc/en and other websites

Power: 3.3-5VDC

Frequency: Single 3.1KHz tone

Song Level: 80db

3 Pin Interface & Power

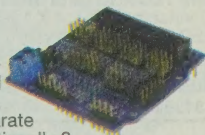
SPI single line data line. TTL compatible

Set includes Board & 6in. Interconnect jumpers.

L: 2-3/16" W: 9/16" H: 1/2" WT: .09

STOCK #	DESC.	1EA
31063-MP	Microcontroller Buzzer Module	\$1.95

SENSOR SHIELD



Arduino Sensor Shield V5.0

Sensor Shield allows quick, easy access to all 20 of the analog and digital pins on the Arduino UNO & MEGA.

Each sensor connector has separate +5 volts and ground contacts. Additionally 8 connectors are provided for special purpose modules Power supplied from the Arduino or a jumper selectable external power supply. Shield also includes Reset Button, Power LED, I/O pin D13 LED. All connectors have 2.54mm pin spacing.

I/O Ports:

6 Analog

14 digital

1 128X64 graphic LCD parallel

1 128X64 graphic LCD serial

1 APC220 wireless module

1 Bluetooth wireless module

1 SD card interface

1 Ultrasonic module

1 I2C serial port

1 RS232 serial port

L: 2-1/4" W: 2-1/4" H: 3/4" WT: .06

STOCK #	DESC.	1EA
31058-MP	Sensor Shield V5	\$7.95

X-Y JOYSTICK

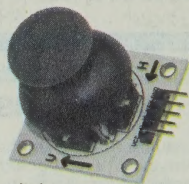


Analog joystick for the Arduino and other microcontrollers. Contains two 10K potentiometers connected to the handle lever for X-Y movement and when the handle is pressed in the centered position, a momentary switch "Z" is closed. The Potentiometers are wired as voltage dividers between Gnd. & Vcc. The lever is spring loaded to return to center position at rest. Typical connections are X and Y to the AD converter and the momentary Z switch to a digital pin. The Z switch has a 1K pull up resistor and is active low output. Can be used with 3.3V and 5V microcontrollers. This unit has three Dupont 3 pin male header connectors (.025sq X .1 spacing) for each function which makes connecting to the Arduino Sensor Shield a snap. Ideal for steering robots, games, panning cameras, and RC model control. With LED power indicator and four mounting holes

L: 2-1/8" W: 1-3/4" H: 1-1/4" WT: .04

STOCK #	DESC.	1EA
31061-MP	Arduino X-Y Joystick with LED	\$5.95

X-Y JOYSTICK

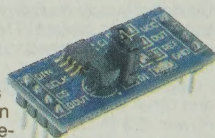


Analog joystick for the Arduino and other microcontrollers. Contains two 10K potentiometers connected to the handle lever for X-Y movement and when the handle is pressed in the centered position, a momentary switch "Z" is closed. The Potentiometers are wired as voltage dividers between Gnd. & Vcc. The lever is spring loaded to return to center position at rest. Connections to a microcontroller are X and Y to the AD converter and the momentary Z switch to a digital pin. The Z switch has a 10K pull up resistor and is active low output. Can be used with either 3.3V or 5V supplies. Single 5 pin male header connectors (.025sq X .1 spacing) for Output. Four corner mounting holes.

L: 2" + Pins W: 1-1/4" H: 1-1/4" WT: .02

STOCK #	DESC.	1EA
31064-MP	X-Y Joystick	\$4.95

10 BIT D/A CONVERTER

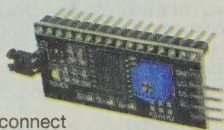


D/A Converter for Microcontrollers
Serial CMOS D/A converter based on the TLC5615 Chip. Converter has precision internal conversion from current to voltage for ease of use. All Pins brought to headers. Selectable onboard TL431A reference or external reference source. Serial input including SPI, QSPI & Microwire using Din, Sclk & CS. Dout pin allows for daisy chaining. 16, 12, or 10 bit data (using 2 or 6 dummy bits.)
Power: 5VDC
Output: Voltage=2(Vref)("data"/1024) @ 20mA max
Input: 10 Data bits with either 2 or 6 dummy bits
See TLC5615 Data Sheet for data format
Connectors: Dual 4 X 1 X .1" Pitch headers
LED Power Indicator

L: 1-3/16" W: 9/16" H: 1/2" WT: .01

STOCK #	DESC.	1EA
31952-MP	10 Bit DAC Converter	\$9.95

SERIAL SPI/LCD DRIVER BOARD

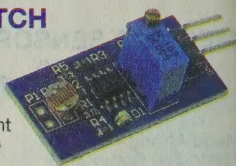


Complete SPI interface designed around the PFC8574T chip. Use to connect a 2X16 LCD Character Display to a Arduino or other micro controllers. Freeware available through www.arduino.cc/en and others.
[SPI Address lines A0-A2 may be pre set from factory. add or remove solder bridges as needed]
Power: 5VDC
Input: 4 Pin (.1") header for connection to uController
Outputs: 16 TTL Compatible pins to LCD module
LED indicator for 5V Power.

L: 1-5/8" W: 3/4" T: 1/2" WT: .02

STOCK #	DESC.	1EA
30285-MP	uController SPI/LCD Interface	\$3.95

LIGHT SENSOR SWITCH



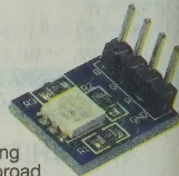
Arduino Light Sensor Switch Module

Module is used to detect ambient light. The sensor is a CDS photo resistor connected to a LM393 voltage comparator IC with adjustable sensitivity control (R6). The LED indicator that turns on when dark or low light is detected. The output can be connected directly to a micro-controller I/O port or a relay. Ideal for turning on lights automatically at night.
Power: 3.3V to 5VDC
Supply Current: < 1mA (LED off)
Output: Digital TTL Open Collector Current sink 20mA
3 Pin .1in. Pitch Header for Power & Output

L: 1-1/4" W: 5/8" T: 1/2" WT: .02

STOCK #	DESC.	1EA
31589-MP	Light Detector	\$2.75

RGB LED MODULE



Arduino Experimenter's RGB Module

Module with a high brightness 5050 SMD RGB LED configured as common cathode with on board current limiting resistors. By using a micro-controller, a broad range of colors can be achieved by pulse width modulating each LED in different ratios. You can Search the net for various applications and code.
Input: 3.3V or 5V (on-board Resistors)
Forward Voltage Drop VF: Red = 2.1V, Blue = 3.2V, Green = 3.2V
Forward Current IF: 20mA/Color 50mA/Color Max.
Max Reverse Voltage VR: 5V
Intensity min.: Red=500mcd, Green=800mcd, Blue=300mcd
Wavelength Typ.: Red=625nm, Green= 530nm, Blue= 465nm
LENS - Water Clear
Viewing Angle - 120deg

L: 5/8" W: 1/2" H: 1/4" WT: .02

STOCK #	DESC.	1EA
31810-MP	RGB Experimenters Module	\$1.50

MULTIFUNCTION SHIELD



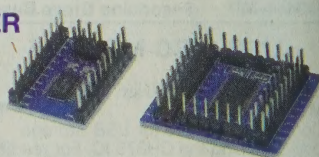
Multipurpose Experiment/Learning Arduino Shield

Board features many useful functions for learning & experimenting with an Arduino UNO R3. Full connections to Arduino I/O Pins.
Includes: 4 Digit LED 7 Segment Display with 74HC595 Drivers, 4 Red LEDs, Buzzer/Speaker, 10K Pot, 3 NO Pushbutton switches, 1 RESET Pushbutton Switch, Header Socket for APC220 Bluetooth or Voice Recognition Module, 3 pin Socket Header for I/R Sensor, 3 Pin Socket Header for LM35/18B20 Temperature Sensor. 4 I/O ports with 3 Pin (Male) Headers for connecting Servo Motors or Sensors using interconnect cables

L: 2-11/16" W: 2-1/8" H: 1" O/A WT: .05

STOCK #	DESC.	1EA
32798-MP	Arduino Multi-Shield	\$9.95

LEVEL SHIFTER MODULES



8 or 16 Bit Bidirectional, Tri-state, Non-Inverting Bus transceiver (level shifter) for microcontrollers and other digital applications. Uses the 74LVC(8 or 16)T245 chip that allows for low voltage shifting between two 1.8V to 5.5V buses.
Terminals: 0.1in. Pitch Headers

8 Bit L: 1-1/16" W: 3/4" T: 1/2" WT: .01

16 Bit L: 1-1/4" W: 1-1/16" T: 1/2" WT: .01

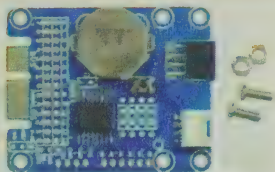
STOCK #	DESC.	1EA
32698-MP	8 Bit Tri-state Level Shifter	\$5.95
32699-MP	16 Bit Tri-state Level Shifter	\$7.95

REAL TIME CLOCK

Arduino Accurate Clock Shield

Clock uses the DS3231 IC from Maxim
Standardized and stackable shield board compatible with the Arduino I/O Pins. Uses the Tx & Rx pins on the controller. Uses I2C for host communications <25MHz.
Power: 3-5VDC/ 200uA active, 900nA(timekeep)
Accuracy: 2ppm 0C-40C (~1min/Yr)

L: 2-5/16"	W: 1-13/16"	WT: .04
STOCK #	DESC.	1EA
31147-MP	Accurate Realtime Clock	\$16.25

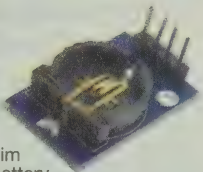


MICRO REAL TIME CLOCK

Mini Arduino Accurate Clock Module

Clock uses the DS3231 IC from Maxim
Mini module board with CR1220 battery holder. Uses I2C (SLC/SDA) for host communications <25MHz.
Power: 3-5VDC/ 200uA active, 900nA(timekeep)
Accuracy: 2ppm 0C-40C (~1min/Yr)
Output: 4Pin, 0.1in. Pitch Header
LED power Indicator
Requires CR1220 Battery (Not Supplied)

L: 1"	W: 5/8"	H: 1/2"	WT: .004
STOCK #	DESC.	1EA	
31950-MP	Accurate Realtime Clock	\$5.95	



QUAD INFRARED OBSTACLE DETECTOR

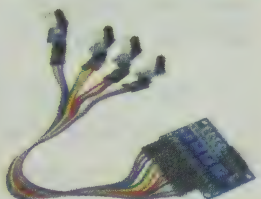
Quad Reflective Obstacle Sensor for Microcontrollers

Each of the 4 sensor boards has a I/R LED and a I/R detecting photo transistor. Sensor boards connect to the control board containing a LM339 voltage comparator IC and trigger level adjustment pots. The detection distance is a function of target reflectivity and shape. Each circuit has a LED indicator turns on when an object is detected (Output switches LOW). The outputs can be connected directly to microcontroller ports or add a driver transistors to the output, & it could switch a relay or other loads exceeding 20mA.

Power: 3.3V to 5V
Supply Current < 1mA (LEDs off)
LEDs: 4: 1 Red for each channel for Detection
Output: Digital, TTL Current sink 20mA, 10K Pull-up
Connections: .1in. Pitch Headers.
Includes: 4 Sensor Boards, 1 Control Board, 7in. Jumpers

Control L: 2-3/4" W: 1-3/16" H: 3/8"
Sensor L: 5/8" W: 7/16" H: 5/8" Total Ship WT: .06

STOCK #	DESC.	1EA
33025-MP	Quad I/R Obstacle Detector	\$7.95



ULTRASONIC RANGE MODULE

40KHz Ultrasonic ranging module used to determine the distance to a target. Features high accuracy, non-contact, stable measurements in a simple 4 connection +5VDC module. Module "Pings" a target when triggered then outputs a logic pulse proportional to the distance. Power: 5VDC
Range: ~2cm--2.5m Resolution: >0.5cm

L: 1-3/4" W: 7/8" H: 5/8" WT: .02

STOCK #	DESC.	1EA
19605-UT	Ultrasonic Range Module	\$3.31

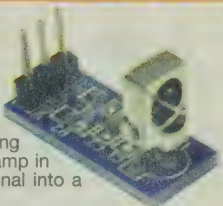


I/R REMOTE CONTROL MODULE

Add I/R Remote Control to your Arduino or Project

Serial Infrared receiver module utilizing a VS1838B module. Pin Diode & amp in one pack. Converts digital I/R signal into a pulse train output burst.
Power: 3.3 or 5V
I/R Wavelength: 940nm
Center Freq. 38KHz
View Angle: 90deg.
Data Burst: 400uS Min800uSMax
Output: 3 X1 X .1" Pitch Header
Data Format: Transmitter/Controller dependant

L: 7/8"	W: 3/8"	H: 1/2 "	WT: .002
STOCK #	DESC.	1EA	
31945-MP	I/R Receiver Converter	\$1.95	

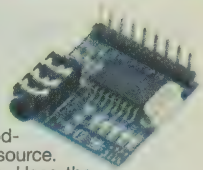


DTMF TONE DECODER

Phone Tone Decoder for Arduino & Other Microcontrollers

Compact sensor sized board for decoding DTMF phone tones from any audio source. Ideal for remote control applications. Uses the MT8870 all-n-1 IC. 4 outputs corresponding to the HEX binary code for the 4x4 (0-9, A-D, * and #). 3.5mm input jack for the audio, 1X9 0.1" pitch header for power & all signals. LEDs on all Outputs. Sample software available at <http://arduinobasics.blogspot.com>, www.arduino.cc/en and others on-line.

L: 1-1/16"	W: 15/16"	H: 1/2"	WT: .01
STOCK #	DESC.	1EA	
32697-MP	DTMF Tone Decoder	\$5.95	



INFRARED OBSTACLE DETECTOR

Reflective Obstacle Sensor

The sensor has a I/R LED and a I/R detecting photo transistor. Transistor is connected to a LM393 voltage comparator IC with adjustable trigger level. The detection distance is a function of target reflectivity and shape. The LED indicator turns on when an object is detected (Output switches LOW). The output can be connected directly to a microcontroller port or add a driver transistor to the output, & it could switch a relay or other loads exceeding 20mA.

Power: 3.3V to 5V
Supply Current < 1mA (LEDs off)
LEDs: 2: Red for Power and Green for Detection
Output: Digital TTL Current sink 20mA, 10K Pull-up
Connections: 3Pin, .1Pitch Header.

L: 47mm OA	W: 14mm	H: 8mm	WT: .02
STOCK #	DESC.	1EA	
33024-MP	I/R Obstacle Detector	\$2.95	



ULTRASONIC RANGE FINDER

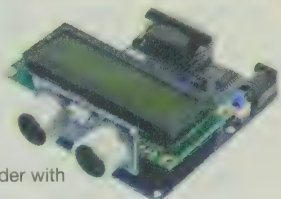
Range finder set up for Microcontrollers

A basic ultrasonic range finder with 3 parts, consisting of:
Base Control board with a STC89C52 processor, 2 X 16 LCD1602 backlit display
HC-SR04 Ultrasonic Ranging module.
Base board has all CPU ports connected to headers, Power switch, Reset switch, Interface for display & Ultrasonic head and RS232 comPort.

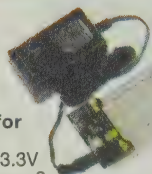
Power: 5VDC 5.5/2.5mm Coaxial power Jack
Outputs: .1in. Pitch Headers
DB9-Female Serial Port for Programming,

logging, debug
Range: <3cm--2.5m
Note: This module is not for beginners. Requires downloading of files, software etc.

L: 3-1/2" O/A	W: 3-1/8" O/A	H: 1-1/4" O/A	WT: .2
STOCK #	DESC.	1EA	



POWERED BREADBOARD



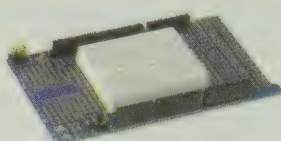
Solderless prototyping for Microcontrollers

Breadboard with attached 3.3V & 5V power supplies. Features: 2 Distribution strips (200 pts), Breadboard panel (830Pts.), a +3.3VDC & +5VDC power supply Board. Max total load: 700mA. Supply Board plugs into breadboard. Selectable 5V, 3.3V or No Bus voltage for both bus strips. Power On/Off switch on board. Input power from USB Port or 5.5/2.5mm power jack. 6.5-12VDC input range. Includes a 12V Plug supply. Panel cutout: 45.5 X 26.5mm

WT: .5

STOCK #	DESC.	1EA
30176-TE	Powered Breadboard	\$10.95

PROTOTYPING BREADBOARD



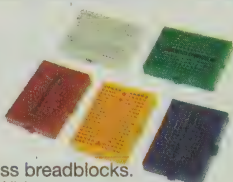
Arduino Solderless Breadboard

Prototype MEGA shield V3 features:
 .1" headers Pins for direct connection to/from Arduino MEGA Power & Ports.
 .1" header Sockets for stacking additional boards
 6 Pin ICSP Port
 Reset Switch,
 2 LEDs: Power & Status
 ICSP Com. Port
 300+ plated holes for breadboarding
 Peel & Stick breadboard with 170 tie points

L: 4-1/8" W: 2-3/16" H: 3/4" WT: .1

STOCK #	DESC.	1EA
31547-MP	MEGA Solderless Breadboard	\$9.95

5PC. COLORED BREADBOARDS

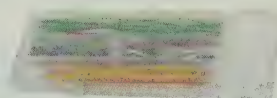


5 pc. set of 170 tie point solderless breadblocks.
 1ea. Red, Blue, Green, Yellow & White
 Features: ABS plastic body. Nickel plated contacts Rated 2A Max. Contact resistance less than 1 milliohm @ 1kHz. Tested for over 10,000 cycles. Suitable for 19-29 AWG wire and all DIP size components.
 Interlocking edges for combining multiple boards.

L: 1.9" W: 1.4" H: .37" WT: .1

STOCK #	DESC.	1EA
33341-TE	5pc. Mini Breadboards	\$5.95

PROTOBOARD JUMPERS



Plastic box with 140pcs. color coded AWG 22 jumper wires for use with the breadboards and protoboards. Various lengths with pre stripped and bent for insertion into breadboards. Contains: Red, Brown, Orange, Yellow, Green, Blue, Violet, Grey, White & Black.

WT: .3

STOCK #	DESC.	1EA
27027-TE	Solderless Breadboard Wire Kit	\$3.95

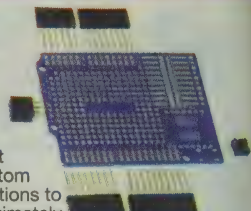
65PC. MOLDED BREADBOARD JUMPERS

Multi-colored flexible jumpers with a .024in. dia. steel pin with molded strain relief on ends. Designed for breadboards. You get 4pcs. ea. 240mm and 200mm, 8pcs. 150mm, and 49pcs 120mm

L: 4-1/2" to 9-1/2" WT: .08

STOCK #	DESC.	1EA
30116-PL	65Pc. Breadboard Jumpers	\$3.95

PERFBOARD SHIELD KIT

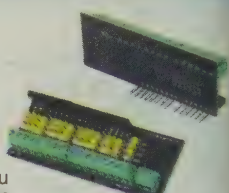


The prototyping shield makes it easy to make up your own custom circuits. Provides extra connections to all the Arduino I/O Pins, approximately 190 uncommitted Plated through holes, location for both through hole (0.1" pitch) & SMD IC (.05 pitch) IC's. Includes a Reset button, Header sockets.
 Compatible with Mega 1280/2560 & UNO-R3

L: 2-11/16" W: 2-1/16" WT: .04

STOCK #	DESC.	1EA
32795-MP	Perfboard Shield Kit	\$4.95

UNO TERMINAL SHIELD BOARD



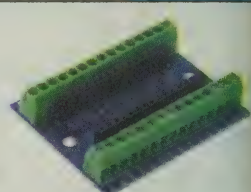
Arduino UNO Terminal Strip Breakout Shield

Real handy pair of boards that you snap apart and mount outboard as "Gull Wings" on your Arduino UNO board so they don't block mounting additional shields. Use to access the controllers I/O header connections with screw terminals for wiring. Includes 3 Pin headers with all I/O paired with Vcc & Ground.
 NOTE: Shipped as a connected Pair that you snap apart

L: 2-13/16" W: 1-1/8" WT: .1

STOCK #	DESC.	1EA
32799-MP	Multi Terminal Screw Shield	\$5.95

NANO TERMINAL SHIELD BOARD



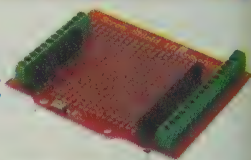
Arduino NANO Terminal Strip Breakout Shield

Terminal strip adapter board for the NANO 3 microcontroller. Allows easy expansion or wiring to sensors, motors etc. Mounting holes for a more permanent installation.

L: 2-1/8" W: 1-5/8" H: 1/2" WT: .05

STOCK #	DESC.	1EA
32796-MP	NANO Screw Terminal Breakout	\$4.95

PERFBOARD TERMINAL SHIELD



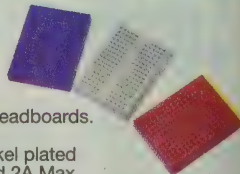
Arduino Terminal Strip Perfboard Shield

UNO Perfboard Terminal Shield makes it easy to wire and make up your own custom circuits. Provides feedthrough headers & terminal strip connections to all the Arduino I/O Pins (ICSP pins NOT available). A breadboard area with approx 310 uncommitted plated thru holes on 0.1in. pitch. Includes a Reset button.

W: 2-15/16" L: 2-7/16" H: 3/4" WT: .06

STOCK #	DESC.	1EA
32797-MP	Perfboard Terminal Shield Kit	\$5.95

MINI SOLDERLESS BREADBOARDS

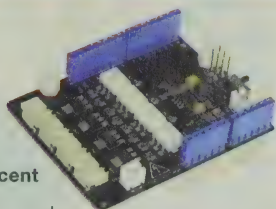


Three 170 tie point solderless breadboards. 1 each in Red, White & Blue. Features: ABS plastic body, Nickel plated phosphor bronze contacts Rated 2A Max. Contact resistance less than 1 milliohm @ 1kHz. Tested for over 10,000 cycles. Suitable for 19-29 AWG wire jumpers, component leads and all DIP size components.

L: 1.8" W: 1.4" H: .37" Total WT: .2

STOCK #	DESC.	1EA
19048-TE	3 Mini Breadboards	\$7.95

EL SHIELD BOARD

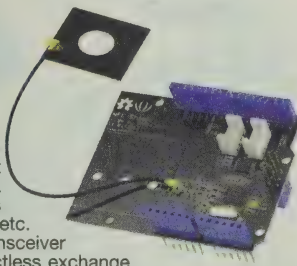


Arduino Electroluminescent Driver Module

Program your Arduino to make E/L tubing "Dance" with music or other sources. Use PWM output from Arduino to drive 4 channels of Opto-Couplers & TRIACs. Standardized and stackable shield board compatible with the Arduino I/O Pins. Requires external 5V to 110V DC/DC converter. Drives up to 15M of E/L. JST2.0 headers for connection to inverter.

L: 2-11/16"	W: 2-1/8"	WT: .12
STOCK #	DESC.	1EA
30431-MP	Seeeduino EL Card Shield	\$27.50

NFC SHIELD BOARD

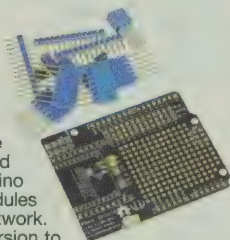


Arduino Near Field Communication Module

NFC is a system of short range (5cm-2-3/8") data exchange used at gas stations, security doors, etc. Shield uses a PN532 Transceiver module to handle contactless exchange at 13.56MHz. Supports ISO14443 A & B Standards. Shield will read and write a 13.56mhz wand or tag or you can setup point to point (P2P) data exchange by using 2 NFC Shields. Standardized and stackable shield board compatible with the Arduino I/O Pins. Uses the SPI port to communicate leaving the Arduino I/O available. Includes Grove UART and I2C ports.

L: 2-11/16"	W: 2-1/8"	WT: .1
STOCK #	DESC.	1EA
30429-MP	Seeeduino NFC Card Shield V2	\$14.90

XBEE SHIELD BOARD

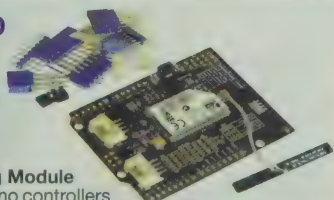


Arduino BEE Interface Module

Standardized and stackable shield board compatible with the Arduino I/O Pins. Stack any BEE series modules to build your own wireless network. Module can provide level conversion to give you 2 way conversion between high & low I/O levels. On-board breadboard grid for your own circuits.

L: 2-11/16"	W: 2-1/8"	WT: .06
STOCK #	DESC.	1EA
30430-MP	Seeeduino XBEE Shield	\$10.90

WI-FI SHIELD BOARD

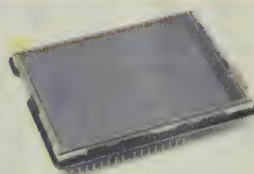


Arduino Networking Module

Wi-Fi Shield for Arduino controllers designed around the RN171 Module to give 802.11b/g capability. Supports TCP, UDP and FTP. Secure authentication WEP-128, WPA-PSK, WPA2-PSK. Built in Networking apps: DHCP client, ARP, ICMP ping, HTTP, UDP, CP. Standardized and stackable shield board compatible with the Arduino I/O Pins. Uses the Tx & Rx pins on the controller. Includes Grove UART and I2C ports. Some soldering & Assembly Required

L: 2-11/16"	W: 2-1/8"	WT: .1
STOCK #	DESC.	1EA
30435-MP	Seeeduino WiFi Shield	\$60.90

TFT LCD/TOUCH SCREEN SHIELD DISPLAY

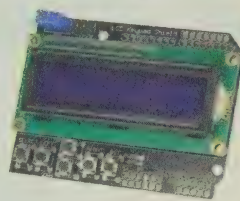


Arduino 2.8in. TFT Touch Screen Module

Top off your stack by Adding Text and graphics to your Arduino with this Multifunction Shield. Contains a full color TFT backlight Display, a resistive Touch Screen and a SD Card socket. Display resolution: 320X240, Colors: 65k. 4 wire resistive touch screen. Uses 4 Analog pins for Touch input, SPI for communication. Standardized and stackable shield board compatible with the Arduino I/O Pins. No external power supply needed.

L: 2-11/16"	W: 2-1/8"	WT: .12
STOCK #	DESC.	1EA
30437-MP	Seeeduino TFT Touch Shield	\$55.90

2 X 16 LCD SHIELD

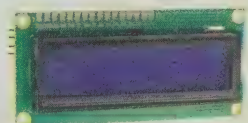


LCD and Keypad Shield for Arduino

LCD Shield for UNO, MEGA & Duemilanove. LCD features: 16 character by 2 line LCD module (Hitachi 44780 compatible), dark blue back ground, white characters, White LED backlight and contrast. Shield has 5 control buttons for: Up, Down, Left, Right and Select. Buttons use only one analog ADC port input, saving pins for other uses. Additional features include LCD contrast adjust, Reset button, ICSP port and power LED. Solder pads available for access to +5v, Gnd, Rst, A1-A5 and digital D0, D1, D2, D3, D11, D12, D13. Power: +5 volts @ 26mA (supplied by Arduino) Character size 2.95mm X 5.15mm Dot Size 0.55mm x 0.60mm Overall size: L3.20in., W2.35in., H0.55in(excluding pins) Power: +5 volts @ 26mA (supplied by Arduino)

L: 3-1/8"	W: 2-1/4"	H: 7/8"	WT: .12
STOCK #	DESC.		1EA
31059-MP	LCD Shield for Arduino		\$11.95

SERIAL 2 X 16 LCD



Serial LCD for Arduino

LCM1602 IIC V1 Serial Board LCD for UNO, MEGA & Duemilanove. The I2C/SPI communication with microcontroller does not take a Shield position, simple 4 wire connection. LCD features: 16 character by 2 line LCD module (Hitachi 44780 compatible), dark blue back ground, white characters and White LED backlighting. Power LED. Power: +5 volts (supplied by Arduino) Character size: 2.95mm X 5.15mm Dot Size: 0.55mm x 0.60mm I/O: 4 pin header 0.1in Pitch

L: 3-1/8"	W: 1-7/16"	H: 7/8" O/A	WT: .1
STOCK #	DESC.	1EA	
31164-MP	2X16 Serial LCD Arduino	\$9.95	

LCD DRIVER BOARD

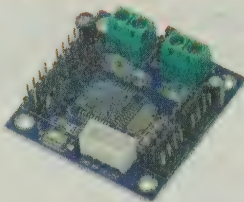


Character LCD Driver for Arduino

Complete I2C interface designed around the PFC8574T chip. Use to connect a 2X16 LCD Character Display to a Arduino or other micro controllers. Freeware available through www.arduino.cc/en and others. [SPI Address lines A0-A2 may be pre set to Logic High from factory. Remove or add jumper/resistors as needed] Power: 5VDC Input: 4 Pin (0.1" pitch) header for power & connection to uController Outputs: 16 holes on 0.1" pitch for LCD module pins Variable resistor for contrast adj.

L: 1-5/8" (Body)	W: 5/8"	H: 7/16"	WT: .02
STOCK #	DESC.	1EA	
32700-MP	2 X 16 LCD Driver Board	\$3.95	

16 CHANNEL SERVO MOTOR CONTROLLER



Mini 16Channel Servo Motor Controller Module
Controller for up to 16 independent servos (SG-90 and similar). Jumper Select single 4.5-5.5V or separate Logic and/ or 4.5-6V Motor supplies. Built-in Test functions and Auto identification of Serial Port.

Power: Logic 4.5-5.5V

Servos: Select 4.5-5.5V or 4.5-6V

Input: TTL/USART 4 Pin Connector (Rx/Tx/Vcc/Gnd).

Output: 3 X 1.1" Pitch X16 headers for servo connections

LED Power Indicators for both Vcc's

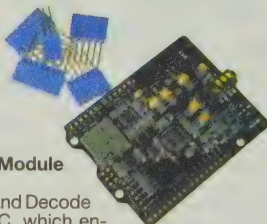
SC: 1-11/16"

H: 1/2"

WT: .03

STOCK #	DESC.	1EA
31946-MP	16Ch. Servo Driver	\$19.95

MUSIC SHIELD BOARD



Arduino MIDI Instrument Module V2.0

Module designed to Encode and Decode Music. Based on VS1053B IC, which enables it to play files from SD card. Able to play MIDI notes by modifying the board. Supported files: MP3, WMA, WAV, AAC, MIDI, Ogg Vorbis. On-board uSD card socket (Max card 2Mb) & 3.5mm 16/32 ohm headphone jack. Multi function Switch for control of Volume & song forward/back. MIDI interface breakout with low latency. Standardized and stackable shield board compatible with the Arduino I/O Pins. Short time recording with Arduino/Seeeduino MEGA Only.

Some soldering & Assembly Required

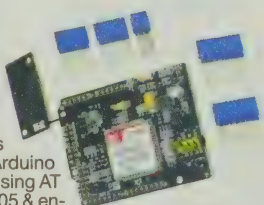
L: 2-11/16"

W: 2-1/8"

WT: .1

STOCK #	DESC.	1EA
30439-MP	Seeeduino Music Shield	\$28.50

GPRS SHIELD BOARD



Arduino Cellular Communications Module

Give your Arduino controllers cellular connectivity. Use the Arduino to dial a number, text friends using AT command set GSM 07.07/07.05 & enhanced SINCOM. Quad band support: 850/900/1800/1900MHz. Supports TCP/UDP protocols. Jack for headset, SIM card socket and coin cell socket (Headset, SIM card & CR1220 3V Coin cell not included.) Standardized and stackable shield board compatible with the Arduino I/O Pins. Requires Unlocked SIM.

Some soldering & Assembly Required

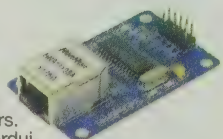
L: 2-11/16"

W: 2-1/8"

WT: .12

STOCK #	DESC.	1EA
30436-MP	Seeeduino GPRS Cell Shield	\$60.90

ETHERNET INTERFACE



Compact LAN Module using the ENC28J60 chip with an SPI interface for Arduino or other micro controllers. Freeware available through www.arduino.cc/en and others

Power: 3.3VDC (5V Tolerant)

u Controller interface: 10 Pin header for power & control

LAN: RJ-45 Jack

RJ jack mounted Green & Yellow LEDs

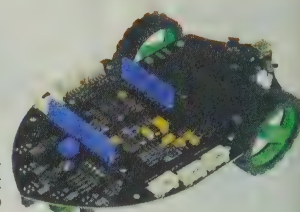
L: 2-1/4"

W: 1-5/16"

WT: .02

STOCK #	DESC.	1EA
30284-MP	Micro Controller Ethernet Module	\$7.95

SHIELD BOT ROBOT BASE



Arduino Beginner Robot Platform

Fully Stackable Arduino Shield module that changes your Arduino Seeeduino into a beginner robot. On-board line following sensors, packed full of expansion ports to create a base for robotics. Plug & Play set up so you can get started in a short time. Features 2 DC motors, 5 reflective I/R line trackers, 900mAh LiPo Battery Pac, 6 Grove expansion Ports, USB Mini B female port

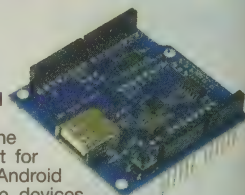
L: 6-5/8"

W: 3-11/16"

WT: .7

STOCK #	DESC.	1EA
30433-MP	Seeeduino Robot Shield	\$70.90

ANDROID USB SHIELD



USB Host Shield for Android Based

The ADK USB Shield provides the solution for the easiest support for Android Arduino controller and Android based phones. Android phone devices need Android 2.3.4 version while tablets need Android 3.1. Provides APK package and compiled source files compatible with Arduino UNO 328, Diecimila/Duemilanove 328, MEGA 2560 (recommended), MEGA1280.

Power: 5V/3.3DC from Microcontroller

I/O : USB 2.0 Port: Type A female

Full shield I/O pass through from controller

1 SPI Port

L: 2-1/8"

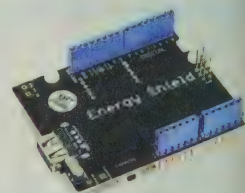
W: 2-1/8"

H: 7/8"

WT: .04

STOCK #	DESC.	1EA
31057 MP	ADK USB Host Shield Board	\$27.95

ENERGY SHIELD BOARD



Arduino Power Source & LiPo Battery Charger

Mixed power board for Arduino. Provides Input/charger JST port for a 3.7V LiPo battery (not supplied), JST input Port for 4-5-5.5V Solar Panel and a USB Type A female for extracting power from Host Computer. SPI Header for Pass through. Standardized and stackable shield board compatible with the Arduino I/O Pins.

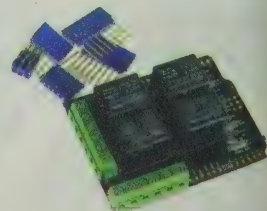
L: 2-11/16"

W: 5/8"

WT: .1

STOCK #	DESC.	1EA
30443-MP	Seeeduino Energy Shield	\$30.90

RELAY SHIELD BOARD



Quad Relay Shield V2.0 for Arduino

Shield has 4 high quality relays providing independent SPDT switching. LED indicates status of each relay. Contacts Rated: 35V Max @ 8A Max. Terminal strips for relay contacts. Standardized and stackable shield board compatible with the Arduino I/O Pins.

[Caution:] Place 2 layers of electrical tape over USB connector on Arduino Board to prevent contact.

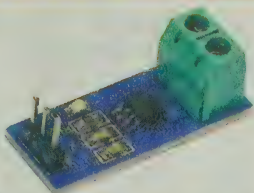
L: 2-11/16"

W: 2-1/8"

WT: .2

STOCK #	DESC.	1EA
30440-MP	Seeeduino Quad Relay Shield	\$21.00

5A CURRENT SENSOR



Arduino AC/DC Current Sensor

5Amp Current Sensor Module

Based on the ACS712TELC-05B hall effect Sensor mount on a convenient board with terminal strip for connecting your load to monitor and header pins to interface with your Arduino or micro controller.

Power: 5Vdc +0.5V

On board power LED

Measures: positive to negative 5Amps AC or DC

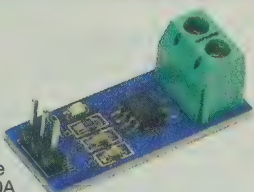
Sensitivity: 185mV per Amp

Warning: This IC uses a hall effect and is susceptible to a magnetic fields!

L: 1-1/4" W: 1/2" T: 9/16" WT: .02

STOCK #	DESC.	1EA
31584-MP	5A Current Sensor Module	\$4.79

20A CURRENT SENSOR



Arduino AC/DC Current Sensor

20Amp Current Sensor Module

Based on the ACS712TELC-20A

hall effect Sensor mount on a convenient board with terminal strip for connecting your load to monitor and .1 Pitch header pins to interface with your Arduino or micro controller.

Power: 5Vdc +0.5V

On board power LED

Measures: positive to negative 20Amps AC or DC

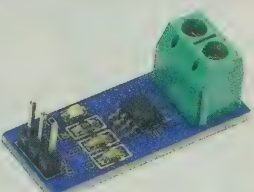
Sensitivity: 66mV per Amp

Warning: This IC uses a hall effect and is susceptible to a magnetic fields!

L: 1-1/4" W: 1/2" T: 9/16" WT: .02

STOCK #	DESC.	1EA
31944-MP	20A Current Sensor Module	\$4.79

30A CURRENT SENSOR



Arduino AC/DC Current Sensor

30Amp Current Sensor Module

Based on the ACS712TELC-30A hall effect Sensor mount on a convenient board with terminal strip for connecting your load to monitor and header pins to interface with your Arduino or micro controller.

Power: 5Vdc +0.5V

On board power LED

Measures: positive to negative 30Amps AC or DC

Sensitivity: 66mV per Amp

Warning: This IC uses a hall effect device and is susceptible to a magnetic fields!

L: 1-1/4" W: 1/2" T: 9/16" WT: .02

STOCK #	DESC.	1EA
31586-MP	30A Current Sensor Module	\$4.79

CURRENT SENSOR



Arduino AC Current Sensor Module

Allows your microcontroller to monitor AC

Current drawn on a line. Simple Current

transformer with a 1000/1 ratio.

Measures current up to 10A Max.

Connects to Analog Input Pins of Microcontroller.

On board load resistor gives 1mA/A output.

Power: None

Current: 5A

Output: 5mA (1mA/1A) into 200ohm Load (~.2V/A)

Pin .1" Pitch Header Out

L: 3/4" W: 13/16" T: 15/16" WT: .06

STOCK #	DESC.	1EA
31579-MP	AC Current Sensor	\$3.95

I/R XMIT/RECEIVER PAIR

I/R Transmitter & Receiver Pair for Arduino, Raspberry-Pi and Other Controllers

Compact Transmitter "Clicker" with 21 button bubble keypad that uses the NEC code protocol Powered by a CR2025 coin cell.

Receiver board designed with the 1838T I/R sensor that contains the opto PIN diode, pre-amp, filtering, demodulator in one small package. Uses 1 pin of the microcontroller GPIO. Code libraries, applications and Information & Freeware available through: www.arduino.cc/en, www.raspberrypi.org and others.

Power: 5VDC

Frequency: 38KHz

Output: TTL compatible Data, Current Sink

Connection: 3 Pin .1in. Pitch Header

Recv. L: 3/4" W: 9/16" H: 1/2"

Trans. H: 3-3/8" W: 1-1/2" T: 1/4"

WT: .04

STOCK #	DESC.	1EA	10+EA
32352-MP	IR Transmitter & Receiver Pair	\$3.95	\$3.49



RFID/NFC READER/WRITER



RFID kit for Arduino Microcontrollers

MIFARE RFID Reader/Writer

set up that includes a MF522

reader Board, a S50 Plastic

Card and a small KeyFOB.

Supports ISO14443A Transponder protocols and CRYPTO01 encryption algorithm. Open source software available at www.arduino.com and several other sites.

Module: Based on the MFRC522 IC

Frequency: 13.56MHz

Power: 3.3V @ 26mA Active, <80uA Sleep mode

Read/Write Time: <2mS

Distance: <10cm

Data Transfer Read/Write: 424kbs

Interface: SPI

Module includes straight & right angle Headers that you have to solder

Size: 60L X 40W X 6mm Without header

Card: NFC Smart Card/Tag MIFARE S50, Blank card.

Memory: 1K EEPROM (768Available)

Comm. Speed: 106 Kbaud

Freq: 13.56MHz.

of Writes: 100K

Size: 86 X 55 X .9mm

Compatible With most NFC supporting Android Devices.

Keyfob: NFC MIFARE 1K ISO 14443A

Freq: 13.56MHz.

of Writes: 100K

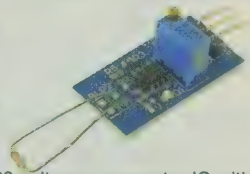
Waterproof ABS Case

Size: 32W X 40L X 4mm

WT: .06

STOCK #	DESC.	1EA
31111-MP	RFID/NFC Reader/Writer	\$11.95
31112-MP	Additional RFID/NFC Card	\$0.99

TEMPERATURE SENSOR



Arduino Temperature Sensor Switch

Uses a resistive glass sealed NTC temperature sensor. The sensor is connected to a LM393 voltage comparator IC with adjustable trigger level (R6). The LED indicator turns on when above the set temperature and off when below. (Output is LOW below set temp.) The output can be connected directly to a micro-controller port. Add a driver transistor to the output, & it could switch a relay or other loads exceeding 20mA. Use for fan controllers, freezer alarms, battery chargers, thermostats, etc.

Power: 3.3V to 5V

Supply Current < 1mA (LED off)

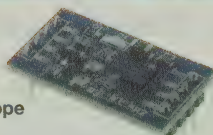
Output: Digital TTL Open Collector Current sink 20mA

3Pin .1Pitch Header for Power & Output.

L: 1-3/16" W: 5/8" T: 5/8" WT: .02

STOCK #	DESC.	1EA
31588-MP	Temperature Sensor Board	\$2.49

3 AXIS GYRO MODULE



Three-axis digital output gyroscope for Microcontrollers

Designed with the STMicroelectronics L3G4200D triple axis accelerometer/Gyro.

Power: 2.4 V to 3.6 V

Scale: 250/500/2000deg/Sec. (dps) (Selectable)

Output: I2C or 3/4 wire SPI (Selectable)

Mode: Slave

I/O: 1.8V Low voltage-compatible

16 bit-rate value data output

Temperature sensor (8-bit data output)

Two digital output lines (interrupt and data ready)

Low and high-pass filters with selectable bandwidth

Ultra-stable over temperature and time

Embedded power-down and sleep mode

FIFO: 32-slot, 16-bit data X 3 (yaw, pitch, and roll)

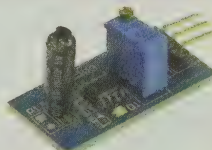
LED Power Indicator

Connections: 2 X 4 Pin, 0.1" Pitch headers.

L: 1-1/16" W: 9/16" H: 1/2" O/A WT: .005

STOCK #	DESC.	1EA
32695-MP	3 Axis Gyroscope Module	\$7.95

TILT SENSOR MODULE



Arduino Tilt & Vibration Module

Arduino powered board with a SW-18010 sensor using the LM393 IC for adjustable sensitivity to eliminate False triggering. Module has a LED indicator that flickers when vibrations are detected. The output is a fast rising pulse, which can be connected directly to a micro-controller. Ideal for tamper alarms on cars and other items.

Power: 3.3V to 5.5V

Supply Current: < 1mA (LED off)

Output: TTL Open Collector 20mA Max Current Sink

LED ON upon detection

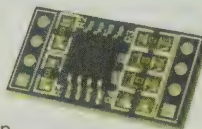
Tilt Angle: Approx. 45 deg.

3 Pin .1" pitch Header

L: 1-1/4" W: 5/8" T: 1/2" WT: .02

STOCK #	DESC.	1EA
31580-MP	Tilt Sensor Board	\$2.75

128MB SPI FLASH MEMORY



Compact Serial Flash Memory board for small systems.

Uses the Winbond W25Q128FV Chip.

Power: 3.3VDC (2.7-3.6V) @ ~4mA Active

Organization: 65k Pages of 256 bytes each.

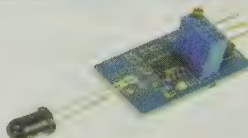
Erase: Supports 4KB sector/32 & 64KB Block, Entire Chip

Input/Output: 2 X 4 Pin, 0.10" Pitch solder holes for headers or wire.

L: 7/8" W: 7/16" H: 1/8" WT: .001

STOCK #	DESC.	1EA
32702-MP	128MB SPI Memory Module	\$4.95

FLAME SENSOR



Arduino I/R Flame Sensor

Module can detect flames & I/R light sources in the Low Infrared spectrum (760nm to 1100nm). Detector is a infrared photo diode, connected to a LM393 voltage comparator with adjustable sensitivity. The module has a LED indicator that turns on when IR is detected. The output can be connected directly to a micro-controller. Uses: Flame/fire detection, IR remote control testing etc.

Power: 3.3V to 5V

Supply Current: < 1mA (LED off)

Output: Digital TTL Open Collector Current sink 20mA

IR Bandwidth: 760nm to 1100nm

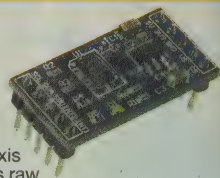
Detection angle: 60°

Not for contact with Flames or High Temperatures.

L: 1-1/4" W: 5/8" H: 1/2" WT: .02

STOCK #	DESC.	1EA
31581-MP	Flame Sensor Module	\$2.45

3 AXIS ACCELEROMETER SENSOR



Add an Accelerometer to Arduino & Microcontrollers

Designed for the ADXL345 triple axis accelerometer, this board supplies raw 16bit 2's complement data to a microcontroller through a SPI or I2C interface. Features Tap/Double Tap, and Free fall detection. Freeware available from arduino.cc/en/youtube & the many forums.

[NOTE:] Header requires soldering

Power: 3-5VDC 40uA operating.

Output: 3 or 4 Wire SPI or I2C

Range: Select +-2, +-4, +-8 or +-16G

Resolution: 13bit/4mG/LSB

Connections: Dual 5 Pin (1") Input headers for connection to power & uController

L: 1-1/8" W: 9/16" H: 1/2" WT: .02

STOCK #	DESC.	1EA
31583-MP	3 Axis Accelerometer	\$4.95

MICRO REAL TIME CLOCK



Mini Arduino Real Time Clock Module

Clock uses the DS1302 IC from Maxim Mini module board with CR1220 battery holder. 3Pin synchronous serial Data (Clock,I/O,CE) for host communications. Tracks: Hours,Min,Sec, Day,Date,Mo, & Year.

Power: 3-5VDC/ 2nA active, <300nA(timekeep)

Accuracy: Crystal accuracy, trim & Temp.dependant

Output: 3 Pin .1in. Pitch Header SCLK, I/O,RST

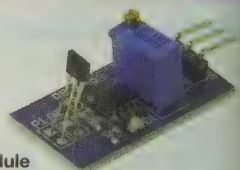
Input: 3 Pin .1Header (Vcc1, Vcc2, Gnd)

Requires CR1220 Battery (Not Supplied)

L: 1-1/8" W: 5/8" H: 1/2" WT: .004

STOCK #	DESC.	1EA
31949-MP	DS1303 Realtime Clock	\$3.95

HALL EFFECT SPEED SENSOR



Arduino Hall Effect Switch Module

Module can detect a small magnet at a few millimeters. The A3144 Hall effect sensor is connected to a LM393 voltage comparator IC with adjustable trigger level (R6). The LED indicator turns off when a magnet is detected (Output LOW when in Mag field). The sensor has two flat sides and is polarity sensitive. One side detects the north pole and the other detects the south pole of the magnet. The output can be connected directly to a micro-controller port. Ideal to use as a limit switch on your DIY 3D printer, robot or Place a magnet on motor shaft and use to measure RPM.

Power: 3.3V to 5VDC

Supply Current < 9mA (LED off)

Output: Digital TTL Open Collector Current sink 20mA

Magnetic Sensitivity 50 - 350 Gauss

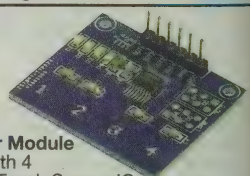
Sense Distance: Depends on Magnet strength

3Pin .1Pitch Header for Power & Output

L: 1-3/16" W: 5/8" T: 5/8" WT: .02

STOCK #	DESC.	1EA
31587-MP	Speed Measuring Hall Sensor	\$3.95

4 BUTTON TOUCH SENSOR



Arduino Digital Touch Sensor Module

Capacitive Touch pad sensor with 4 Positions utilizing the TTP224 Touch Sensor IC.

Power: 2.4-5.5VDC Onboard regulator

CMOS Output: Timed or Toggle, Active High or Active Low

Jumper field for adjusting modes.

Response Time: 60mS fast mode or 160mS in Low power

6 Pin I/O header.

Output Pin & Status LED for each output

L: 1-3/8" W: 1-3/16" H: 1/2" WT: .02

STOCK #	DESC.	1EA
31576-MP	4 inputTouch Sensor Board	\$5.95

BLUETOOTH USB ADAPTER

Add Bluetooth to Phones, Printers, Etc.
Plug-in Bluetooth to USB adapter designed around the CSR chip Version 2.

Supports most Windows systems.

Power: 5V from USB Host

Band: 2.4GHz ISM Band

Bluetooth Standard: V2.0 + EDR Class 1,2 & 3

USB Standard: V2.0

Communication Rate: 3Mbps Max

Range: ~20m

Modulation: FHSS

L: 7/8" W: 11/16" T: 5/16" WT: .03

STOCK #	DESC.	1EA
31942-MP	Bluetooth Transceiver, USB Plug-in	\$4.95

BLUETOOTH HOST

Bluetooth Serial Host Module

for Microcontrollers

Bluetooth 2.0 protocol host module with a programmable baud rate of 1200 thru 115200 (default 9600). Operates as Host/Slave pair

Power: 3.3VDC

1 time programmable Name, Default "NAME"

1 time programmable Passcode, Default 1234

L: 1-1/16" W: 5/8" H: 1/4" WT: .01

STOCK #	DESC.	1EA
31816-MP	Bluetooth Serial Host Module	\$9.95

BLUETOOTH SLAVE

Bluetooth Serial Slave Module

for Microcontrollers

Bluetooth 2.0 protocol Slave module with a programmable baud rate of 1200 thru 115200, (default 9600). Operates as Slave/Host pair

Power: 3.3VDC

1 time programmable Name, Default "NAME"

1 time programmable Passcode, Default 1234

L: 1-1/16" W: 5/8" H: 1/4" WT: .01

STOCK #	DESC.	1EA
31817-MP	Bluetooth Serial Slave Module	\$9.95

BLUETOOTH MASTER

Bluetooth Serial Host/Slave

Module for Microcontrollers

Bluetooth 2.0.E.2 protocol host/Slave module with a programmable baud rate of 1200 thru 115200, (default 9600). Uses AT commands to switch Host/Slave

Power: 3.3VDC

Programmable baud rate

1 time programmable Name, Default "NAME"

1 time programmable Passcode, Default 1234

L: 1-3/8" W: 3/4" H: 1/4" WT: .01

STOCK #	DESC.	1EA
31818-MP	Bluetooth Serial Master Module	\$11.95

315MHZ T/R PAIR

Transmitter/Receiver R/C Link for Microcontrollers

MX-JS-05V & MX-FS-03V 315MHz T/R Pair for remote control applications. Transmitter uses AM modulation to send any digital data to receiver. Output is replica of input data no decoding provided. Requires Antenna(s) not included

Power: Receiver: 5VDC @ 5mA (standby)

Transmitter: 3.5-12VDC @ <40mA (Xmit)

Frequency: 315MHz +/- 75 KHz

Xmitt Power: <10mW depending on Power Supply

Output Impedance: ~ 50 ohms

Receiver Sensitivity: ~-105db

Modulation: AM

Input/Output Data: TTL compatible

Data Rate: ~4KB/S

Range: 20-200m dependant on Power Supply, terrain & antennas.

Antenna Info: 25-30cm solid wire.

SOLD AS PAIR

Xmitter SQ: 3/4" H: 1/4" Rec. L: 1-1/4" W: 9/16" H: 5/16" ShipWT: .02

STOCK #	DESC.	1EA
31960-MP	315MHz R/C Pair	\$3.95

2.4GHz TRANSCEIVER MODULE

2.4GHz ISM Wireless Serial Port Development Board

2 board set consisting of a Nordic NRF24L01 2.4GHz Transceiver daughter board and a **STC 15F204** (80C51 CPU Family 3.6-5.5V Core) single chip Microcomputer motherboard. MCU provides the handshaking for the UART serial interface.

Auto Packet assembly, detection & validation

MCU: Compatible with 8051 CPU Command Set

Power: 3.8-5.5V On-board 3.3V Regulator

Memory: 4K Flash/256 RAM/ 1K EEPROM

Available Ports: P3.2-7/P1.6 & 7/P5.4 & 5

Connection: dual 7X1 .1in Header holes for Ports

2X4 header for daughter bd.

1X4 Header Pins for RX,TX,Vcc,GND

Interface: SPI daughter board/ RxTx Serial Output

NRF24L01+ features:

Power: 5V

Freq: 2.4GHz Modulation: GFSK

Bandwidth: 1 or 2MHz

Data Rate (air): 250K,1M or 2Mbps

3 FIFOs Rx TX 32 Bit.

L: 1-9/16" W: 1-1/16" H: 3/4" WT: .02

STOCK #	DESC.	1EA
31814-MP	ISM 2.4GHz Transceiver Module	\$5.95

2.4GHz TRANSCEIVER MODULE

2.4GHz ISM Wireless Serial Port Development Board/Passthrough

2 board set consisting of a Nordic NRF24L01 2.4GHz Transceiver daughter board and a **STC 15L204** (80C51 CPU Family 2.4-3.6V Core) single chip Microcomputer motherboard. MCU provides the handshaking for the UART serial interface.

Auto Packet assembly, detection & validation

MCU: Compatible with 8051 CPU Command Set

Power: 3.8-5.5V On-board 3.3V Regulator

Memory: 4K Flash/256 RAM/ 1K EEPROM

Available Ports: P3.2-7/P1.6 & 7/P5.4 & 5

Connection: dual 7X1 .1in Header holes for Ports

2X4 header for daughter bd.

1X4 Header Pins for RX,TX,Vcc,GND

Interface: SPI daughter board/ RxTx Serial Output

NRF24L01+ features:

Power: 5V

Freq: 2.4GHz Modulation: GFSK

Bandwidth: 1 or 2MHz

Data Rate (air): 250K,1M or 2Mbps

3 FIFOs Rx TX 32 Bit.

L: 1-9/16" W: 1-1/16" H: 3/4" WT: .02

STOCK #	DESC.	1EA
31941-MP	ISM 2.4GHz Transceiver Module	\$8.95

2.4GHz TRANSCEIVER MODULE

2.4GHz ISM Wireless serial Port Development Board

2 board set consisting of a Nordic NRF24L01, 2.4GHz Transceiver daughter board and a **STC 15L204** 3.3V single chip Microcomputer motherboard. MCU provides the handshaking for the UART serial interface.

Auto Packet assembly, detection & validation

MCU: Compatible with 8051 CPU Command Set

Power: 5VDC (2.4-3.6V) On-board 3.3V Regulator

Memory: 4K Flash/256 RAM/ 1K EEPROM

Available Ports: P3.2-7/P1.6 & 7/P5.4 & 5

Connection: dual 7X1 .1in Header holes for Ports

2X4 header for daughter bd.

1X4 Header Pins for RX,TX,Vcc,GND

Interface: SPI daughter board/ RxTx Serial Output

NRF24L01+ features:

Power: 3.3V

Freq: 2.4GHz Modulation: GFSK

Bandwidth: 1 or 2MHz

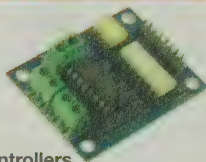
Data Rate (air): 250K,1M or 2Mbps

3 FIFOs Rx TX 32 Bit.

L: 1-9/16" W: 1-1/16" H: 3/4" WT: .02

STOCK #	DESC.	1EA
31940-MP	5V ISM Transceiver Module	\$5.95

H-BRIDGE OPTO-ISOLATED DRIVER



Dual Driver for Arduino & Microcontrollers

Designed around the L293Driver IC with full signal isolation using TLP521 series Optocouplers. Board can drive 2 DC motors or 1 four wire 2 phase stepper. TTL logic control input. Freeware available through www.arduino.cc/en and others.

Isolation: 2500V RMS

Power: Logic 3.3-5V

Driver: 4.5-36VDC Jumper for single supply operation under 5.5V

Output: .8A cont. 1.2A Peak

Input: TTL logic levels

6 Pin .1in Pitch Header for Logic Power & Input

6 Pin .1in Pitch Header for Output & External Power selection

Terminal strip for A/B/B motor & Motor Power

LED for Power indication.

L: 2-1/16" W: 1-9/16" H: 1/2" WT: .03

STOCK #	DESC.	1EA
31597-MP	Isolated Bridge Power Driver	\$8.95

STEP MOTOR DRIVER

StepStick Step Motor Driver for Microcontrollers

Micro sized A4988 "StepStick" driver board for 3D printers. Adjustable Current control. Programmable Step: Full/Half/Forth/Eight/16th.

Drive Type: Dual "H"

Logic Power: 3.3V or 5VDC

Driver Power: 8-35VDC

Input Signal: TTL logic

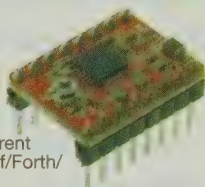
Max Current: 2A/Phase (Max total power: 25W)

.1in Pitch X 0.5" Header pins for RepRap boards

Board. 50mm X 44mm

L: 13/16" W: 9/16" WT: .001

STOCK #	DESC.	1EA
32395-MP	Micro StepStick Driver	\$8.95



H-BRIDGE MOTOR DRIVER

Dual Driver for Microcontrollers

Designed around the L9110S IC, board can drive 2 DC motors or 1 four wire 2 phase stepper. TTL logic control input. Freeware available through www.arduino.cc/en and others.

Power: 2.5-12VDC

Output: .8A cont. 1.5A Peak

Input: TTL logic levels

6 Pin .1in Pitch Header for Power & Input

Terminal strip for A/B/B motor

LED for Power indication.

L: 1-1/8" W: 15/16" H: 1/2" WT: .02

STOCK #	DESC.	1EA
31596-MP	"H" Bridge Power Driver	\$2.95



MINI POWER DRIVER

Current Driver for Arduino

or other Micro-controllers

7 channel Driver Board utilizes the

ULN 2003 IC. high current driver.

Same board we use in our 31592 motor driver set.

Can drive motors, solenoids & steppers depending on your configuration.

Output LEDs for Drivers 1-4. Useful for Step motor Phases.

All Outputs available on additional header. Header for selecting internal/external Motor power.

Power: 5-12VDC

Drive Current: 150mA typ./300mA/Peak 500mA

Depends on Duty Cycle & #of drivers activated

Signal: TTL logic

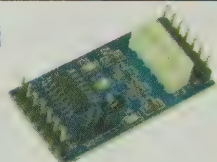
7 Pin .1in. Pitch Headers for Input & Output

5 Pin XH-5P socket for connection to a Motor

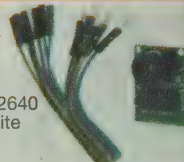
4 Pin .1in. Pitch Header for Power.

L: 1-5/8" W: 7/8" H: 1/2" WT: .02

STOCK #	DESC.	1EA
31594-MP	Step Motor Mini Driver	\$1.95



ARDUINO 2MP CAMERA



ArduCam 2M Pixel Camera

Board incorporates the OmniVision OV2640

CMOS sensor. I/R Filter, Automatic White

Balance, Exposure

Control & Black Level calibration.

Snapshot or Video operation. Many programmable features.

Interface: I2C for configuration

SPI for Commands & Data

Power: (From controller) 5V

Normal: <70mA

Low Power: <20mA

Resolution: 1600X1200 Still

Pixel Size: 2.2um X 2.2um

Compression: JPEG

Supports: UXVGA,SVGA,VGA,QVGA,CIF,QCIF

Lens: M12-0.5 mount Fixed Focus: 1M-Inf.

2 corner mtg. holes.

Includes 5in. jumpers for connection to the Arduino

H: 1-3/8" Body W: 1" D: 3/4" O/A WT: .03

STOCK #	DESC.	1EA
33275-MP	2MP Arduino Camera	\$36.95

RS485 SERIAL BOARD



RS-485 Transceiver for

Arduino & Microcontrollers

Complete TTL/RS485 interface designed around the MAX485 chip. Designed to connect RS485 single or multiple communicating units to Arduino or other equipment. All MAX485 Pins are available on the 2 header connectors. Terminal strip for connecting the 485 cable. Freeware available through www.arduino.cc/en and others.

Power: 5VDC

Input: Dual 4 Pin (.1") header for connection to uController

Output: Terminal strip

LED for 5V Power.

L: 1-3/4" W: 17/32" H: 7/8" WT: .01

STOCK #	DESC.	1EA
31574-MP	uController TTL/RS-485 Interface	\$2.95

TEMPERATURE MODULE



1-Wire Digital Temperature Sensor

Arduino Module

The popular DS18B20 temperature sensor is loaded with features. High accuracy (+/-0.5C) over -10 to +85C range. Each device has a 64bit factory ID allowing multiple units on a single control line. User defined, programmable alarms, temperature resolution of 9 or 12bits. The sensor uses the standard "Dallas 1-Wire" serial interface. Can be connected directly to your 3.3v or 5v micro controller. Many uses in HVAC, weather monitoring, process control etc. The net is loaded with examples, code and projects. Power On LED.

Power: 3 - 5.5VDC

Current: 1mA Operational/759nA Standby

Sensor: Dallas DS18B20 TO-92,

Interface: 1 Wire SPI

Resolution: Selectable 9 or 12bits

Accuracy: +/- 0.5C @ -10 to +85C

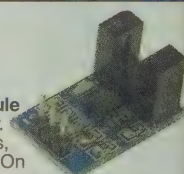
Temp Range -55 to +125C (-67F to +257F)

4 Pin .1in. Pitch Header for Power

L: 7/8" W: 13/32" T: 1/2" WT: .01

STOCK #	DESC.	1EA
31578-MP	Temperature Measurement	\$2.95

OPTO INTERRUPTER SENSOR



Arduino Opto-Interrupter Sensor Module

Nifty little board using a Opto-Interrupter.

Wide slot sensor ideal for item counts,

lever operations, safety switch etc. On

board LM393 Comparator for a reliable output.

POWER: 3.3-6VDC (5VDC nom)

OUTPUT : 6mA min @ 5V Current Sink when Obstructed

LED On when Obstructed

Connector: 3 pin male header (.025sq X .1 pitch)

Sensor Gap: .235" Wide X .325" deep gap

L: 1" H: 9/16" T: 9/16" WT: .02

STOCK #	DESC.	1EA
31577-MP	Opto-Interrupter Shield	\$2.95

PROGRAMMABLE DIGITAL THERMOSTAT



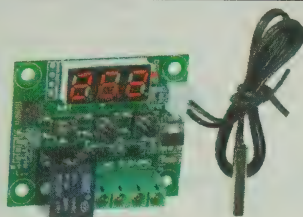
Compact, microprocessor based, dual threshold digital PID thermostat with isolated relay output for cooling and heating applications. Three, 2 digit LED displays for Ambient, Start & Stop temperatures.

Features: Programmable set Points:
 "Start" point closes Relay, "Stop" point releases Relay.
 Temperature Range: -9 to +99 deg. C
 Power: 9-14VDC (12VDC nominal) <1W
 Refresh rate: 0.5sec.
 Accuracy: Measurement: 1deg.
 Control: 1.0deg.
 Relay: SPST-NO 10A/250/125VAC/30VDC
 Sensor: 10K ohm NTC probe (1m leads)
 Operating Temp. Range: -10 to 60deg. C; 20-85% humidity
 Terminal Strips for Power & Relay contacts.

W: 3-1/6" H: 2-1/16" D: 1-1/16" WT: .12

STOCK #	DESC.	1EA
32709-MP	Digital Teermostat "C"	\$9.95

"C" DIGITAL TEMPERATURE CONTROLLER



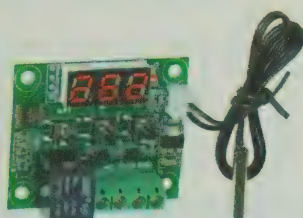
Compact digital thermo-
 stat with isolated relay output and 3digit 0.28" LED display.

Features:
 Programmable set Points, Cool or Heat control, Hysteresis,
 Delay and High Temp. Alarm.
 Temperature Range: -50 to +110 deg. C
 Power: 12VDC Current: ~65mA Relay energized
 Refresh rate: 0.5sec.
 Resolution: 0.1deg. from -9.99 to +99.9
 1.0deg. for above 100deg. C
 Accuracy: Measurement : 0.1deg.
 Control: 0.1deg.
 Relay: SPST-NO 10A/14VDC; 5A/125VAC
 Sensor: NTC waterproof probe (12in. leads)
 Temp. Range: -10 to 60deg. C; 20-85% humidity
 Terminal Strip for Power & Relay contacts.

L: 1-7/8" W: 1-9/16" H: 5/8" WT: .04

STOCK #	DESC.	1EA
32184-MP	Digital Temperature Controller "C"	\$5.95

"F" DIGITAL TEMPERATURE CONTROLLER



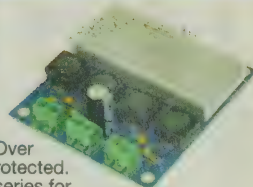
Compact digital thermostat with isolated relay output and 3digit
 .28" LED display.

Features:
 Programmable set Points, Cool or Heat control, Hysteresis,
 Delay and High Temp. Alarm.
 Temperature Range: -50 to +220 deg. "F"
 Power: 12VDC @ ~65mA Relay energized
 Refresh rate: 0.5sec.
 Resolution: 0.1deg. from -9.99 to +99.9
 1.0deg. for above 100deg.
 Accuracy: Measurement : 0.1deg.
 Control: 0.1deg.
 Relay: SPST-NO 10A/14VDC; 5A/125VAC
 Sensor: NTC waterproof probe (12in. leads)
 Temp. Range: -10 to 60deg. C; 20-85% humidity
 Terminal Strip for Power & Relay contacts.

L: 1-7/8" W: 1-9/16" H: 5/8" WT: .04

STOCK #	DESC.	1EA
32764-MP	Digital Temperature Controller "F"	\$6.95

DUAL 50W AUDIO AMPLIFIER

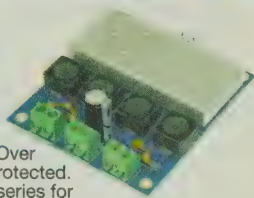


Compact Class "D" stereo
 amplifier using the TDA7492
 BTL (Bridge Tied Load) Chip. Over
 temperature & Output Short protected.
 Outputs can be connected in series for
 Mono operation at 100W.
 Min Impedance: 4 Ohm
 Power Supply Volts: Max 18V with 40hm Load
 Max 26V with 80hm Load
 Power Supply Current: <4A Load Dependent
 Input: 3 Pin, 0.10" Pitch Header
 Outputs: 2X Terminal strip
 Power: Terminal strip

L: 2-3/4" W: 2-7/16" H: 1" WT: .15

STOCK #	DESC.	1EA
32705-MP	TDA 7492, 50W Stereo Amplifier	\$14.95

DUAL 100W AUDIO AMPLIFIER

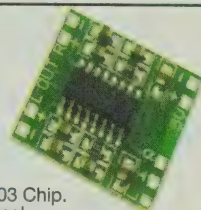


Compact Class "D" stereo
 amplifier using the TDA7498
 BTL (Bridge Tied Load) Chip. Over
 temperature & Output Short protected.
 Outputs can be connected in series for
 Mono operation at 200W.
 Min Impedance: 6 Ohm
 Power Supply Volts: Max 36V with 60hm Load (100 + 100W)
 Max 34V with 80hm Load (80 + 80W)
 Power Supply Current: <6A Load Dependent
 Input: 3 Pin, 0.10" Pitch Header
 Outputs: 2X Terminal strip
 Power: Terminal strip

L: 2-3/4" W: 2-7/16" H: 1" WT: .15

STOCK #	DESC.	1EA
32706-MP	TDA 7498, 100W Stereo Amplifier	\$19.95

MINI STEREO AMP.



Super mini 3W/channel stereo
 class "D" amplifier using the PAM8403 Chip.
 Power: 2.5-5.5VDC (6V Max) 5V Typical
 (5V from a USB port, 3 X 1.5V batteries or 3V lithium cell)
 Output: 3W/Channel @ 4ohm load/5V Supply
 SNR: 80db
 Input: Line level.

L: 7/8" W: 11/16" H: 1/8" WT: .003

STOCK #	DESC.	1EA
33087-MI	Mini 3W Stereo Amp.	\$4.95

14W AUDIO AMPLIFIER

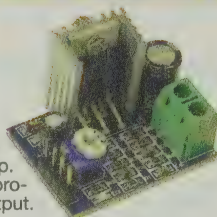


General Use Stereo Audio Amplifier
 Mini 14W (7 + 7) Stereo Audio amplifier
 using the TDA7266 (Bridge Tied Load) Chip.
 Onboard Output level adjustment.
 Thermal and short circuit protection.
 AC Coupled Input, BTL Outputs.
 Power: 3-18VDC, 12VDC Nominal
 Output: ~7WX2 @ 8ohm load/12V Supply
 Gain: ~25db
 Input: Low level, Capacitor Coupled
 3 Pin .1in Pitch Header for Inputs (audio 1,2 & Gnd.)
 Terminal Strip Output for each channel
 5.5/2.1mm Power jack, center +
 LED Power Indicator

L: 2" O/A W: 1-1/2" O/A H: 1-1/8" WT: .06

STOCK #	DESC.	1EA
31806-MI	TDA7266 Stereo Audio Amp.	\$5.95

AUDIO POWER AMPLIFIER



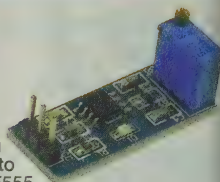
General Use Audio Amplifier

Mini 18W Mono class "AB" Audio amplifier using the TDA2030A Chip. Onboard Output adjust, thermal protection, AC Coupled Input and Output. Power: 6-12VDC
Output: ~5W @ 4ohm load/12V Supply
SNR: >90db
Input: Direct Line level, Capacitor Coupled
4 Pin .1in Pitch Header for Power & Input
Terminal Strip Output
LED Power Indicator

L: 1-1/4" W: 15/16" H: 1-1/8" WT: .02

STOCK #	DESC.	1EA
31804-MI	TDA2030 Mono Audio Amp.	\$3.95

PULSE GENERATOR MODULE

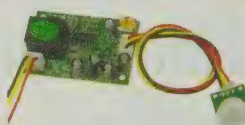


General use module for generating pulses from approximately 4Hz to 1.3KHz. Utilizes the popular NE555 timer IC operating as an astable multivibrator. Module has ten-turn frequency adjustment control and a Power On LED. Use for stepper motor pulses, testers etc.
Power: 5 -12VDC
Supply Current: 10mA
Output Current: 200mA max. Source or Sink
Frequency Range: Min: 4Hz @ 50% Duty Cycle, Max: 1.3KHz @ 98% Duty Cycle
3 Pin .1in. Pitch Header for Power Output

L: 1-3/16" W: 1/2" H: 9/16" WT: .02

STOCK #	DESC.	1EA
31809-MP	NE555 Experimenters Module	\$2.95

PIR RELAY MODULE

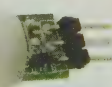


Omnidirectional PIR Motion Detector optimized for the human Body. SPST-NO relay output. Power: 12VDC <50ua. Standby; ~50mA Relay Activated
Adj. Delay: ~18sec to ~3min.
Output: SPST-NO 12V Active
Range: Cone shape; 3-5m @ 0deg. (Head on) 1-3m @ + & -60deg. [Note:] Due to wire AWG Output current limited to 1A
6" pigtail leads In/Out, 6" leads for Sensor.

L: 1-13/16" W: 1-3/16" H: 5/8" Body WT: .08

STOCK #	DESC.	1EA
32183-SC	PIR With Relay Module	\$5.95

MOTION DETECTOR MINI MODULE

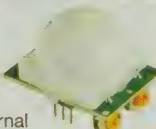


Ultra Mini Dual Element PIR Motion Detectors for the human Body. 3V digital output to drive Your external transistor & relay (not included)
2.7-12VDC Operation @ <.5mA
Fixed 2 Sec. Recycle & Hold times
4m range with 100 degree detection angle.

Dia: 13.5mm L: 18mm WT: .08

STOCK #	DESC.	1EA
32061-SC	PIR Mini Module	\$3.95

MOTION DETECTOR/ LIGHT SENSOR

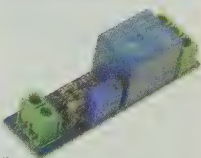


Latest Dual Element PIR Motion Detector for the human Body with adj. 3-10 lux light sensor. 3V digital output to drive Your external transistor & relay (not included)
5-20VDC Operation @ <1mA
2 S-5min. Adj. delay
Adj. 3-7m range with <120 degree detection angle.
Selectable Retrigger/No Retrigger

L: 32mm W: 23mm H: 25mm WT: .08

STOCK #	DESC.	1EA
31227-SC	PIR Mini Module/Sensor	\$3.95

TIME DELAY RELAY MODULE

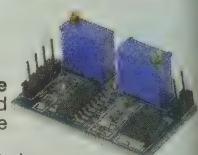


General use relay module provides approximately 0-10sec. Delay on Make. Utilizes the popular NE555 timer IC operating as an monostable multivibrator. Module has ten-turn time adjustment control and power on LED.
Power: 5DC
Supply Current: >90mA energized
Contacts: SPDT 10A @125/250VAC/28VDC
Timing Range: 0 to ~10sec.
LED lights when contacts close.
Terminal strips in & Out.

L: 2-3/8" W: 11/16" H: 3/4" WT: .03

STOCK #	DESC.	1EA
31807-RL	NE555 Time Delay Relay	\$3.95

ADJUSTABLE PWM MODULE

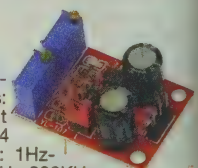


Digital Pulse Width Modulator Module
Adjustable PWM generator based around the SG3525A chip. Adjustable Frequency (R-4) & Duty Cycle (R-3)
Power: 8-12VDC (5V onboard Regulator)
Output Range: 100-400KHz
Connection: Output: 1 X 4Pin .1in. Pitch Header
Power: 1 X 2 Pin .1in. Pitch Header.

L: 1-1/4" W: 3/4" H: 1/2" WT: .01

STOCK #	DESC.	1EA
31951-MP	Pulse Width Modulator Module	\$3.95

ADJUSTABLE PULSE GENERATOR

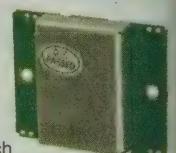


Compact PC board square wave generator utilizing the 555 IC. Features: 5-15VDC input power, 15mA output drive @ 5VDC; 35mA @ 12V Power. 4 jumper selectable frequency ranges: 1Hz-50Hz, 50-1KHz, 1KHz-10KHz & 10KHz-200KHz. Controls for Frequency Adjust & Duty Cycle. Note: Freq. & Duty Cycle interact with each other. 3Pin I/O header.

L: 1-1/4" W: 7/8" H: 9/16" WT: .02

STOCK #	DESC.	1EA
31070-MI	555 Pulse Generator Board	\$5.95

MICROWAVE MOTION DETECTOR

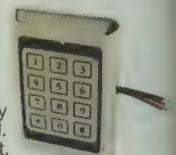


Miniature Microwave Doppler Motion Detector with internal oscillator and patch antennas. Replacement for failed or faulty doppler T/R unit in alarms, door & gate systems. Operating Frequency= 10.525GHz. +-3MHz. Min. output = 5mW, Operating power= 5VDC +- .25V < 60mA. Range approx. 20M. Detection angles: ~40 deg. Vertical/~75deg. Horizontal.

L: 1-3/4" W: 1-7/16" T: 3/8" WT: .02

STOCK #	DESC.	1EA
31234-SC	Doppler uwave Motion Sensor	\$8.95

PROGRAMMABLE SECURITY KEY PAD



ESSEX KTP-133-SN, 12 Button heavy duty keypad with Stainless Steel bezel. Built for harsh environments indoors or out. Programmable Site Code.
Power: 5 or 12VDC Selectable
Code: 26Bit Wiegand
Red & Green LED Indicators
Connection: 12Pin (2X6). 1pitch connector, Mate supplied with 4" pigtail leads. UL/CE Listed. Attached Gasket, fits single gang Box

L: 5-1/8" W: 3-3/8" T: 1/2" (Body) WT: 1.3

STOCK #	DESC.	1EA
31928-SC	Essex S/S Security Keypad	\$49.95

FLUX REMOVER

MG Chemicals 4140 Flux Remover removes all rosin, non-rosin, no clean, ionic & non-ionic flux & residue after soldering. Variable valve allows for a controlled flow. Safe on plastics. No residue. 400gm (14oz.) aerosol can.

Flammable- do not use near ignition sources

DIA: 2-5/8"	H: 8"	WT: 1
STOCK #	DESC.	TEA
30364-MG	MG #4140 Flux Remover	\$13.34



CONFORMAL COAT

MG Chemicals 419C "Acrylic Conformal Coating" is a fast drying, IPC 830 certified Xylene & Toluene free protective coating. Meets UL 94V-0. Protects against moisture, dirt, arcing, shorts and insulates circuit components. Visible under UV light for easy inspection.

340gm (12oz.) aerosol can.

DIA: 2-5/8"	H: 8"	WT: 1
STOCK #	DESC.	TEA
30365-MG	MG #419C Acrylic Coating	\$17.95



SUPER COLD

MG Chemicals 403 "SuperCold134" protects heat sensitive components, rapid cool samples and solidify adhesives & gums. Variable Valve for control. Non-conductive, or flammable, with no VOCs or residue. 100% HFC134A gas (R-134) so it's ozone safe. 285gm(10oz.) or 400gm(14oz.) Aerosol can.

NOTE: Freezes to -51deg. C. can cause bodily harm

DIA: 2-5/8"	H: 6-5/8" small 8-1/2" large	WT: .9/1.2
STOCK #	DESC.	TEA
30355-MG	MG #403A-185G Super Cold 134	\$10.19
30356-MG	MG #403A-400G Super Cold 134	\$13.87



CONTACT CLEANER

MG Chemicals 409B "Electrosolve" Contact cleaner leaves zero residue, penetrates and dissolves contaminants. Safe on most electronic parts like LEDs, boards, ICs and most plastics. Contains Isohexanes.

140gm. (5oz.)or 340gm (12oz.) aerosol can.

DIA: 2-1/8"	H: 5-5/8", 8"	WT: .5/1
STOCK #	DESC.	TEA
30361-MG	MG #409B-140G Cleaner	\$7.75
30362-MG	MG #409B-340G Cleaner	\$13.34



CLEANER & DEGREASER

MG Chemicals 406B " Superwash" cleaner and degreaser. Rapid dry for fast cleaning & degreasing of PC boards, motors, gears, electrical equipment. Non-conductive, safe on plastics, no residue and Ozone safe.

425gm (15oz.) aerosol can.

Flammable- do not use near ignition sources

DIA: 2-5/8"	H: 9-1/2"	WT: 1
STOCK #	DESC.	TEA
30359-MG	MG #406B Super Wash	\$15.26



NICKEL CONDUCTIVE COAT

MG Chemicals 841 "Super Shield" is a UL recognized acrylic paint with conductive nickel filler. Approved for ABS & Polycarbonates. Resists abrasion, don't rub off, reduces emi/rfi 25-75db th1.5mil coat 10K-18GHz. Surface resistance of 0.7Ohm/sq. with single single 1mil. coat. Touch Time: 45sec. Recoat Time 1min. Full Dry@ 25C/24hr. Full Dry @ 65C: 30min.

340gm (12oz) Aerosol Can

Flammable- do not use near ignition sources

DIA: 2-5/8"	H: 8"	WT:1.1
STOCK #	DESC.	TEA
30384-MG	MG #841-340G Nickel Coat	\$36.95



CONTACT CLEANER WITH SILICONE

MG Chemicals Contact with silicone cleaner, penetrates and dissolves contaminants. Safe on switches, locks, battery terminals, plastics & elastomers. Ozone safe. Contains Isohexanes.

40gm. (5oz.) 340gm. (12oz) Aerosol Can

Flammable- do not use near ignition sources

DIA: 2-1/8" 2-5/8"	H: 5-3/4", 8"	WT: .5/1.4
STOCK #	DESC.	TEA
30357-MG	MG #404B-140G Cleaner	\$7.85
30358-MG	MG #404B-340G Cleaner	\$12.39



SILICONE CONFORMAL COAT

MG Chemicals 422B "Silicone Conformal Coating" is a fast drying, flexible protective coating, UL recognized for class94V-0. Protects against moisture, dirt, arcing, shorts and insulates circuit components. Visible under UV light for easy inspection.

40gm (12oz.) aerosol can.

DIA: 2-5/8"	H: 8"	WT: 1
STOCK #	DESC.	TEA
30366-MG	MG #422B Silicone Coating	\$18.95



SUPER DUSTER134

MG Chemicals 402A "SuperDuster 134" removes dust, lint, particals from lens, keyboards, printers, paper handlers etc. Variable Valve for control. Non-conductive, or flammable, with no VOCs or residue. 100% HFC134A gas (R-134) so it's ozone safe. 285gm(10oz.) or 450gm (16oz.) Aerosol can.

DIA: 2-5/8"	H: 6-3/4", 8-1/2"	WT: .9/1.3
STOCK #	DESC.	TEA
30351-MG	MG #402A-285G Duster 134	\$9.51
30352-MG	MG #402A-450G Duster 134	\$14.79

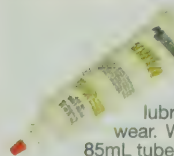


LITHIUM GREASE

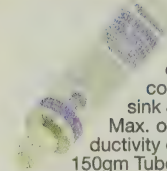
MG Chemicals 8461 is a lithium formulated white grease designed to provide lubrication, corrosion protection and reduced wear. Won't harden. Service range -40 to +180C.

85mL tube

DIA: 2-5/8"	H: 8"	WT: .25
STOCK #	DESC.	TEA
30387-MG	MG #8461-85ml Lithium Grease	\$7.15



HEAT SINK COMPOUND



MG Chemicals 860 is a zinc oxide/silicone based thermal transfer compound designed to move heat away from sensitive components. Fills in tiny gaps between Heat-sink & part. Will not dryout, harden or separate. Max. operating temperature: 200C Thermal conductivity of .675 W/mK: 150gm Tube

WT: .5

STOCK #	DESC.	1EA
30389-MG	MG #860-150G Heat Compound	\$15.26

ROSIN FLUX

MG Chemicals 835 "Rosen Flux" is an instant wetting type RA liquid flux. Use with leaded and lead free solders. Non-corrosive, non-conductive residue. Meets RA14256 requirements. RoHS Compliant. 100mL (4.2oz.) Bottle

Flammable-do not use near ignition sources



WT: .3

STOCK #	DESC.	1EA
30382-MG	MG #835-100ML Rosin Flux	\$8.95

ISOPROPYL ALCOHOL

MG Chemicals 824 "Isopropyl Alcohol" is 99.9% pure. Ideal general purpose cleaner, safe on plastics. Removes light oils, flux and contaminants from optics, relays, boards etc. 1qt. Bottle

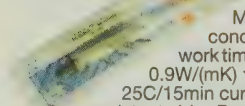
Flammable-do not use near ignition sources



WT: 1.8

STOCK #	DESC.	1EA
30373-MG	MG #824-1L Iso. Alcohol	\$12.95

CONDUCTIVE EPOXY



MG Chemicals 8331 is a Fast cure, conductive silver filled epoxy. 10min. work time @ 25C, .017 Ohm/Cm resistivity, 0.9W/(mK) thermal. 1:1 mix ratio. 5hr cure @ 25C/15min cure @ 65C. Water, solvent and acid resistant. 14g Premeasured Part A & B Syringes

WT: .06

STOCK #	DESC.	1EA
30380-MG	MG #8331-14G Conductive Epoxy	\$39.95

RED INSULATING VARNISH

MG Chemicals 4228 "Red Varnish" insulating Coating motor, transformer & coil windings. Thermal protection to 155C. 3000V/mil dielectric strength. Tack free 10min./cure in 16-24hr. 225mL (7.6oz.) Can.

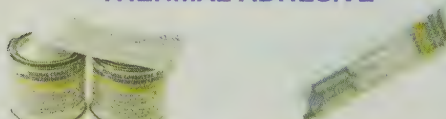
Flammable Wet-do not use near ignition sources



WT: .4

STOCK #	DESC.	1EA
30367-MG	MG #4228 Red Varnish	\$24.97

THERMAL ADHESIVE

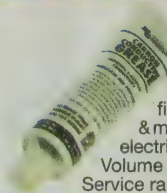


MG Chemicals 8329TCS is a **Slow cure**, thermally conductive adhesive. 1.44W/mK thermal conductivity. 4hr. pot life @ 25C, <1hr @ 80C. 1:1 mix ratio. Water, brine, acid, bases, and aliphatic hydrocarbons resistant. 14g (6mL) Premeasured Part A & B Syringes 466g Premeasured Part A & B Cans

WT: .08/1.4

STOCK #	DESC.	1EA
31967-MG	MG #8329TCS-6mL Adhesive	\$9.85
31968-MG	MG #8329TCS-200mL Adhesive	\$89.95

CONDUCTIVE GREASE

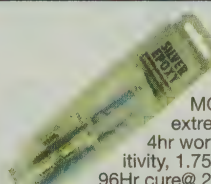


MG Chemicals 846 is a conductive carbon filled silicone grease. Designed to lubricate & maintain a grounding connection, provides a electrical connection between irregular surfaces. Volume resistivity 117 Ohm/cm. Won't harden. Service range -50 to +200C.

WT: .2

STOCK #	DESC.	1EA
30386-MG	MG #846-80G Cond. Grease	\$15.95

EXTREME CONDUCTIVE EPOXY



MG Chemicals 8330S is a slow cure, extreme conductive silver filled epoxy. 4hr work time @ 25C, .0007 Ohm/Cm resistivity, 1.75W/(mK) thermal. 1:1 mix ratio. 96Hr cure @ 25C 1Hr cure @ 65C. Water, solvent and acid resistant.

21g Premeasured Part A & B Syringes.

WT: .06

STOCK #	DESC.	1EA
30379-MG	MG #8330S 21G Silver Epoxy	\$65.00

RUBBER RENEW

MG Chemicals 408A "Rubber Renue" is a fast drying cleaner for rubber belts, rollers etc. Removes particles, oxidation and softens hard or glazed surfaces. No Residue & Ozone safe.

125mL (4.5oz.) Bottle

Caution-Use in well ventilated area.



WT: .6

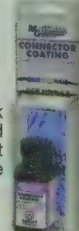
STOCK #	DESC.	1EA
30360-MG	MG #408A Rubber Renue	\$7.95

CONNECTOR COAT

MG Chemicals 4229 "Connector Coat" is a black liquid replacement for tape & shrink. Protects exposed wires & metal. Forms a pliable, moisture resistant bond. Remain flexible from -34 to 200F. Tack free in 10 minutes.

55mL (2oz.) Bottle

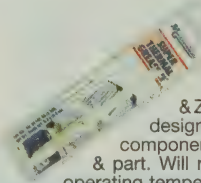
Flammable-do not use near ignition sources



WT: .7

STOCK #	DESC.	1EA
30368-MG	MG #4229 Connector Coat	\$14.95

SUPER THERMAL GREASE II



MG Chemicals 8616 is a heavy synthetic oil with Boron Nitride, Aluminum & Zinc Oxide filled thermal transfer grease designed to move heat away from sensitive components. Fills in tiny gaps between Heatsink & part. Will not dryout, harden or separate. Max. operating temperature: 150C. Thermal conductivity of 1.8W/mK.

8.2gm Syringe

WT: .04

STOCK #	DESC.	1EA
30391-MG	MG #8616-3ML	\$5.95

CONDUCTIVE INK PEN



MG Chemicals 8420-P is a quick dry, conductive silver filled acrylic base liquid. Excellent for repairing or modifying printed circuit boards. Microfine tip gives a minimum 1/32in. (1/16in ave.) line width. .2 Ohms/mil. 10min. dry time @ 25C

8.5gm Pen

WT: .06

STOCK #	DESC.	1EA
30385-MG	MG #8420-P Conductive Ink Pen	\$27.95

SUPER DUSTER152

MG Chemicals 402B "Super Duster 152" removes dust, lint, particals from lens, keyboards, printers, paper handlers etc. Variable Valve for control. Non-conductive, No residue. 99% 1,1-Difluoroethane so it's ozone safe. 285gm (10oz.) or 400gm(14oz.) Aerosol can.

Not to be used near ignition sources
Cannot be shipped by air

DIA: 2-5/8" H: 8-1/2",10"

WT: 1/1.2

STOCK #	DESC.	1EA
30353-MG	MG #402B-285G Duster 152	\$7.45
30354-MG	MG #402B-400G Duster 152	\$9.95

CONDUCTIVE COAT

MG Chemicals 838 "Total Ground" is a acrylic paint with conductive carbon filler. Resists abrasion, won't rub off, reduces emi/rfi. Surface resistance of 250Ohm/sq. with single single 1mil. coat. Touch Time: 20min. Recoat Time 5min. Full Dry@ 25C/24hr. Full Dry @ 65C: 15min. 340gm (12oz) Aerosol Can

Flammable- do not use near ignition sources

DIA: 2-5/8" H: 8"

WT: 1

STOCK #	DESC.	1EA
30383-MG	MG #838-340G Carbon Coat	\$18.95

HEAVY DUTY FLUX REMOVER

MG Chemicals 413B Heavy Duty Flux Remover is a fast drying, cleaner for the non component side of board. Removes all ionic & non-ionic residue after soldering.

425gm (15oz.) aerosol can.

Flammable- do not use near ignition sources

Caution- Use in well ventilated area.

DIA: 2-5/8" H: 9-1/2"

WT: 1

STOCK #	DESC.	1EA
30363-MG	MG #413B Flux Remover	\$17.95

SOLDER BRAID

MG Chemicals "SuperWick" is made from oxygen free copper & pure RMA rosin. When placed on a solder connection and heated; Superwick will draw up the melted solder. 5ft on a plastic spool. Ideal for PC board repair, field service, etc.

L: 5ft/ 25ft.

WT: .2/1

STOCK #	DESC.	1EA
30369-MG	#424 5ft X .05in. Superwick	\$2.85
30370-MG	#425 5ft X .075in. Superwick	\$2.95
30371-MG	#426 5ft X .10in. Superwick	\$3.15
30372-MG	#442 25ft X .05in. Superwick	\$10.95

SILICONE GREASE

MG Chemicals 8462 is a translucent grease designed to provide lubrication, corrosion and moisture protection. Compatible with most plastics & elastomers. Conforms to 21CFR Sec. 178.3570 " Incidental food contact". Service range -50 to +250C.

35mL tube

WT: .25

STOCK #	DESC.	1EA
30388-MG	MG #8462-85ML Silicone Grease	\$12.39

3D PRINTER COLOR FILAMENT

.25kg spools (.55lb.) Premium Plastic Filament used in many 3D printers to create plastic parts. Fit machines that hold 120mm (4-3/4in.) X 52mm (2in.) Spools; or can be rewound.

Material PLA: Polylatic Acid

Spool Dia: 4-3/4"

H: 2"

Ship WT: .84

PLA
Dia: 1.75mm

STOCK #	DESC.	1EA
31715-MC	1.75mm PLA Trans. Filament	\$12.95
31716-MC	1.75mm PLA White Filament	\$12.95
31717-MC	1.75mm PLA Black Filament	\$12.95
31718-MC	1.75mm PLA Red Filament	\$12.95
31719-MC	1.75mm PLA Yellow Filament	\$12.95
31721-MC	1.75mm PLA Green Filament	\$12.95
31722-MC	1.75mm PLA Blue Filament	\$12.95
31723-MC	1.75mm PLA Orange Filament	\$12.95

PLA
Dia: 3.00mm

STOCK #	DESC.	1EA
31735-MC	3.00mm PLA Trans. Filament	\$12.95
31736-MC	3.00mm PLA White Filament	\$12.95
31737-MC	3.00mm PLA Black Filament	\$12.95
31738-MC	3.00mm PLA Red Filament	\$12.95
31739-MC	3.00mm PLA Yellow Filament	\$12.95
31740-MC	3.00mm PLA Green Filament	\$12.95
31741-MC	3.00mm PLA Blue Filament	\$12.95
31742-MC	3.00mm PLA Orange Filament	\$12.95

FLAME RETARDANT POTTING

MG Chemicals 833FRB is a 2 part (2:1) Black Epoxy potting compound that meets UL94-VO test per UL746A. Protects sensitive components, Water, solvent and acid resistant. Includes 3 Stirs & 3 mix Cups. Solvent Free, RoHS Compliant 375 mL (12oz.) kit Boxed.

WT: 1.2

STOCK #	DESC.	1EA
30378-MG	MG #832-B Black Potting	\$43.95

POTTING COMPOUND

MG Chemicals 832 is a 2 part (2:1) Epoxy potting compound. Protects sensitive components, solvent and acid resistant. Available either Black opaque or Clear. Includes 3 Stirs & 3 mix Cups 375 mL 12oz. kit Boxed.

WT: 1.2

STOCK #	DESC.	1EA
30376-MG	MG #832-B Black Potting	\$30.57
30377-MG	MG #832-C Clear Potting	\$29.61

THERMAL ADHESIVE

MG Chemicals 8329TCM is a Medium cure, thermally conductive adhesive. 1.36W/mK thermal conductivity. 45min. pot life @ 25C, 7 hrs. to min. service. 1:1 mix ratio. Water, Brine, acid, bases, and aliphatic hydrocarbons resistant. 14g (6mL) Premeasured PartA & B Syringes

WT: .08

STOCK #	DESC.	1EA
31969-MG	MG #8329TCM-6mL Adhesive	\$9.95

0-18VDC @ 3A BENCH SUPPLY

P/N: 9600

Input: 110 VAC 60Hz

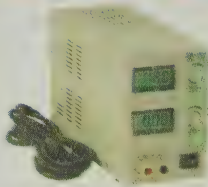
Output: 0-18VDC @ 0-3A

Constant Voltage or Current

Specifications/Features: True Constant Current (Can drive a short) Enclosed Linear bench supply with dual LCD displays for output Volts & Amps. .01%+3mV Line/.02%+3mV Load regulation, <1mV RMS ripple. Front binding posts. Metal case & rubber feet. Internal Temp. controlled fan.

L: 9-1/2" W: 3-5/8" H: 6" WT: 8.6

STOCK #	DESC.	1EA	5EA
29600-PS	0-18V, 3A Adj. Supply	\$60.95	\$52.95



3A MINI BENCH SUPPLY

P/N: 9616

Input: 110 VAC 60Hz

Output: 0-30VDC

0-3A Constant Voltage/Current

Specifications/Features: Adjustable Voltage/adjustable Current limit. Enclosed regulated switching bench supply with backlit LCD display for output Volts & Amps. 1% +10mV Line/1%+5mV Load regulation, <200mV RMS max ripple. Safety Banana jacks output. Internal fan.

H: 6-1/2" W: 2-1/2" D: 8-3/4" WT: 3.9

STOCK #	DESC.	1EA
29616-PS	Mini 0-30V, 3A Adj. Bench Supply	\$40.05



5A MINI BENCH SUPPLY

P/N: 9617

Input: 110 VAC 60Hz

Output: 0-30VDC @ 0-5A

Specifications/Features: True Constant Current (Can drive a short). Enclosed Switching bench supply with backlit LCD display for output Volts & Amps. 1% +10mV Line/1%+5mV Load regulation, <200mV RMS max ripple. Front banana jacks. Internal fan.

H: 6-1/2" W: 3-3/16" D: 8-3/4" WT: 3.9

STOCK #	DESC.	1EA
31017-PS	Mini 0-30V, 5A Adj. Bench Supply	\$50.05



10A MINI BENCH SUPPLY

P/N: 9631

Input: 110 VAC 60Hz

Output: 0-30VDC, 0-10A

Constant Voltage/Current

Specifications/Features: Adjustable Voltage/adjustable Current limit. Enclosed regulated switching bench supply with backlit LCD display for output Volts & Amps. 0.2% +10mV Line/0.2%+5mV Load regulation, <100mV RMS max ripple. Banana jacks output. Internal fan.

H: 6-1/2" W: 3-1/2" H: 8-3/4" WT: 4.6

STOCK #	DESC.	1EA
29631-PS	Mini 0-30V, 10A Adj. Bench Supply	\$102.05



0-30V @ 3A BENCH SUPPLY

Input: 110 VAC 60Hz

Output: 0-30VDC @ 0-3A

Constant Voltage or Current

Specifications/Features: True Constant Current (Can drive a short). Enclosed Linear bench supply with dual LED displays for output Volts & Amps. .01% +3mV Line/.02%+3mV Load regulation, <1mV RMS ripple. Front binding posts. Internal Temp. controlled fan.

L: 11-1/4" W: 5-3/16" H: 6-1/4" WT: 11

STOCK #	DESC.	1EA
29601-PS	0-30V, 3A Adj. Bench Supply	\$39.00



0-30V @ 24A BENCH SUPPLY

P/N: 9317

Input: 110 VAC 60Hz

Output: 0-30VDC 0-24A

Continuous/30A Peak

Constant Voltage/Current

Specifications/Features: True Constant current (Will drive a short). Enclosed Switching bench supply with LCD display for output Volts & Amps. <100mV/P ripple. Front Safety Banana Jacks for <5A, Heavy Duty Binding Posts on rear panel for the higher current.

W: 8-1/4" H: 3-1/4" D: 13" WT: 8

STOCK #	DESC.	1EA
29317-PS	0-30VDC, 24A Adj. Bench Supply	\$249.00



0-30VDC @ 10A BENCH SUPPLY

Input: 110 VAC 60Hz

Output: 0-30VDC @ 0-10A

Constant Voltage or Current

Specifications/Features: True Constant Current (Can drive a short) Enclosed Linear bench supply with dual LED displays for output Volts & Amps. .01% +3mV Line/.05%+3mV Load regulation, <1.5mV RMS ripple. Front binding posts.

L: 11-1/4" W: 10-1/2" H: 6-1/2" WT: 28

STOCK #	DESC.	1EA
29604-PS	0-30V, 10A Adj. Supply	\$169.00



0-30VDC @ 19A BENCH SUPPLY

Input: 110 VAC 60Hz

Output: 0-30VDC @ 0-19A

Constant Voltage or Current

Specifications/Features: True Constant Current (Can drive a short). Enclosed Linear bench supply with dual LED displays for output Volts & Amps. .01% +3mV Line/.05%+3mV Load regulation, <1.5mV RMS ripple. Front binding posts. Internal Temp. controlled fans.

L: 11-1/4" W: 10-1/2" H: 6-1/2" WT: 41

STOCK #	DESC.	1EA	5EA
29950-PS	0-30V, 19A Adj. Supply	\$269.00	\$239.00



0-60VDC BENCH SUPPLY

Input: 110 VAC 60Hz

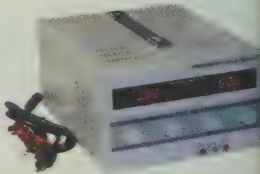
Output: 0-60VDC @ 0-10A

Constant Voltage or Current

Specifications/Features: True Constant Current (Can drive a short) Enclosed Linear bench supply with dual LED displays for output Volts & Amps. .01% +3mV Line/.05%+3mV Load regulation, <1.5mV RMS ripple. Front binding posts.

L: 11-1/4" W: 10-1/2" H: 6-1/2" WT: 38

STOCK #	DESC.	1EA
29960-PS	0-60V, 10A Bench Supply	\$259.00



0-50VDC @ 3A BENCH SUPPLY

P/N: 9612

Input: 110 VAC 60Hz

Output: 0-50VDC @ 0-3A

Constant Voltage or Current

Specifications/Features: True Constant Current (Can drive a short). Enclosed Linear bench supply with dual LED displays for output Volts & Amps. .01% +3mV Line/.02%+3mV Load regulation, <1mV RMS ripple. Front binding posts. Internal Temp. controlled fan.

L: 11-1/4" W: 5-3/16" H: 6-1/4" WT: 14

STOCK #	DESC.	1EA
29612-PS	0-50V, 3A Adj. Supply	\$99.00



DUAL 0-30VDC @ 3A BENCH SUPPLY

P/N: 9623
Input: 110 VAC 60Hz
Outputs: #1: 0-30VDC @ 0-3A
#2: 0-30VDC @ 0-3A **#3:** 5VDC @ 3A fixed
Specifications/Features: Dual Constant Voltage or Current supply with 4 LED meters that displays Volts & Amps. Selectable Independent, Series or Parallel operation of Adj. supplies (0-60V/3A or 0-30V/6A).
 Line Reg.: <0.01%+-3mV(CV) <0.01%+-6mA (CC)
 Load Reg.: <0.01%+- 2mV (CV) <0.01%+- 6mA (CC)
 RMS ripple: 20mVp/p (CV) 50mAp/p (CC)
 Front panel output Binding Posts.Metal case & rubber feet.
 Internal Temp. controlled fan

W: 10-1/4" **D:** 12-1/4" **H:** 6-3/8" **Ship WT:** 17

STOCK #	DESC.	1EA
29623-PS	Dual 0-30V, 3A Adj. Bench Supply	\$139.95



0-15V @ 1A SUPPLY

Input: 110 VAC 60Hz
Output: #1: Selectable 0-5 or 0-15VDC Constant Voltage @ 1A
#2: 5VDC @ 500mA USB Port
Specifications/Features: Enclosed Linear Bench supply with a LED display for output Volts & a Analog Meter for Amps. <150mV Load regulation, <3mV RMS ripple. Front binding posts. Front USB A Female, Rear USB B Female.

D: 6-1/2"	W: 4"	H: 6-1/4"	WT: 3.4
STOCK #	DESC.	1EA	
29319-PS	0-15V, 1A Bench Supply	\$32.00	



0-30VDC @ 16A BENCH SUPPLY

P/N: 9316-PS
Input: 110 VAC 60Hz
Output: 0-30VDC 0-16A Continuous/20A Peak Constant Voltage/Current
Specifications/Features: True Constant current (Will drive a short). Enclosed Switching bench supply with LCD display for output Volts & Amps. <100mVp/p ripple. Front Safety Banana Jacks for <5A, Heavy Duty Binding Posts on rear panel for the higher current.

W: 8-1/4" **H:** 3-1/4" **D:** 13" **WT:** 8

STOCK #	DESC.	1EA
29316-PS	0-30V, 16A Variable Benchtop Supply	\$159.00



HANDHELD ADJ. POWER SUPPLY

P/N: PS2002H
Input: 90-265VAC 50/60Hz
Output: 0-30VDC @ 50W Limits:3.75A @12V/1.6A @ 30V
 5.1VDC @ 2A max on USB Ports
Specifications/Features: Handheld switching supply with backlit LCD display and Adjustable Current Limit.
 Output On/Off button, USB Select button, Store & Recall function Button, Adjust Up/Down Buttons
 Output Adjustable in 10mV/10mA increments. .01%+3mV Line .02%+3mV Load regulation, <10mV RMS ripple.
 Banana jacks for adj. output, USB Type A females for USB.
Note: Selecting USB Overrides Output setting (defaults to 5V).
 To return to set output you use the Store/Recall function.
 Supply is active as long as it is plugged in.
 Includes: 3ft. power cord, Alligator Clip Leads & a USB Type A to Mini B cable.

H: 7-1/4" **W:** 3-3/8" **H:** 1-1/2" **WT:** 1.5

STOCK #	DESC.	1EA
92577-PS	Handheld Power Supply	\$149.95



0-50VDC @ 30A BENCH SUPPLY

Input: 110 VAC 60Hz
Output: 0-50VDC @ 0-30A Constant Voltage or Current
Specifications/Features: True Constant Current (Can drive a short) Enclosed Linear bench supply with dual LED displays or output Volts & Amps. 1.0% +5mV Line /Load regulation, <1mV RMS ripple. Front binding posts.
NOTE VERY HEAVY POWER SUPPLY
MUST BE SHIPPED BY MOTOR CARRIER (TRUCK)

D: 21" **W:** 15-3/4" **H:** 8" **Ship WT:** 134

STOCK #	DESC.	1EA
29970-PS	0-50V, 30A Adj. Bench Supply	\$745.00



PROGRAMMABLE 0-36VDC @ 3A BENCH SUPPLY

INPUT: 110 VAC 60Hz
OUTPUT: 0-36VDC @ 0-3A

Resolution:
 Volts: 1mV @<3.999V
 10mV @>4.000V
 Amps: <=1mA
Ripple: <= 2mV RMS
Regulation: <= .02% +10mV Line/Load
Specifications/Features: Programmable supply with back-lit LCD display, numeric keypad, rotary digital control. Operates as Constant Voltage, Current or Power. Up to 10 settings can be stored in memory. Easy set up using keypad. OPTIONAL Control packages allows PC control via RS232 or USB interface.

W: 8-1/2" **H:** 3-3/4" **D:** 11" **WT:** 14.9

STOCK #	DESC.	1EA
15316-PS	Programmable Bench Supply	\$199.00
15317-PS	RS232 Computer Interface	\$24.95
15318-PS	USB Computer Interface	\$24.95
15319-PS	RS485 Computer Interface	\$24.95



0-120VDC/1A BENCH SUPPLY

Input: 110 VAC 60Hz
Output: 0-120VDC @ 0-1A
Specifications/Features:

Constant Voltage or Current Enclosed bench supply with single backlit LCD meter that displays Volts & Amps. 10 turn Voltage control, Push Button Current control (30ma resolution). <.01% Line/Load regulation (CV) .05% line/load (CC), <1mV /<2mA RMS ripple. Front panel output Banana Jacks & Terminal strips. Rubber feet, top carry strap

W: 5-1/4" **H:** 7-1/2" **D:** 11-1/4" **WT:** 14.3

STOCK #	DESC.	1EA	5+ EA
29312-PS	0-120V, 1A Bench Supply	\$129.00	\$119.00

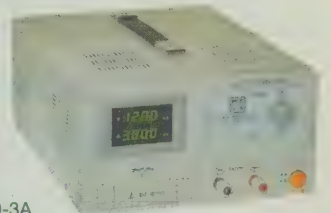


0-120VDC/3A BENCH SUPPLY

Input: 110 VAC 60Hz
Output: 0-120VDC @ 0-3A
Specifications/Features: Regulated Bench supply with Adjustable Current limit. LED meter displays Volts & Amps. Push button switch connects supply to load. Multi turn Voltage control for precise settings. 5mV RMS ripple. Front panel output Binding Posts & Terminal strip for remote Voltmeter Sensing at the load.

W: 10-3/4" **D:** 15" **H:** 6" **Ship WT:** 14.3

STOCK #	DESC.	1EA
29313-PS	0-120V, 3A Adj. Bench Supply	\$265.95

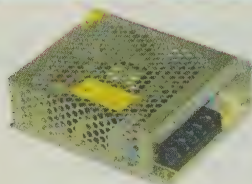


High reliability line of power supplies designed to operate over the wide range of AC power found world wide.



- Overvoltage, Overcurrent, Short Circuit Protected
- 100% Full Load Burn-in Tested Full rated to 50°C
- No minimum load--UL/CANADA/USA/CE listed.

40W SUPPLIES



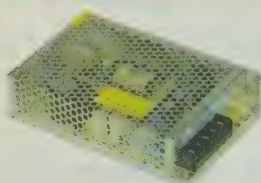
STOCK #	OUTPUT	PART #	RIP/NOISE	EFF	CASE
16000-PS	5V/8A	HF-40W-SL5	80mV	72%	A
16001-PS	12V/3.5A	HF-40W-SL12	100mV	76%	A
16002-PS	15V/2.8A	HF-40W-SL15	100mV	76%	A
16003-PS	24V/1.8A	HF-40W-SL24	100mV	78%	A
16004-PS	48V/0.8A	HF-40W-SL48	150mV	80%	A

DISCOUNT PRICING

Qty: 1-9	Qty: 10-99	Qty: 100+
\$16.00	\$15.49	\$14.80

Input: 85-264 VAC 47-63Hz Universal
L: 129mm W: 98mm H: 40mm Wt: .5kg
L: 5.08" W: 3.86" H: 1.57" Wt: 1.1lb

60W SUPPLIES



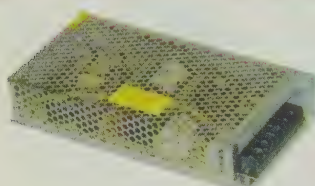
STOCK #	OUTPUT	PART #	RIP/NOISE	EFF	CASE
16005-PS	5V/12A	HF-60W-SL5	80mV	73%	B
16006-PS	12V/5A	HF-60W-SL12	100mV	76%	B
16007-PS	15V/4A	HF-60W-SL15	120mV	77%	B
16008-PS	24V/2.5A	HF-60W-SL24	150mV	80%	B
16009-PS	48V/1.3A	HF-60W-SL48	200mV	81%	B

DISCOUNT PRICING

Qty: 1-9	Qty: 10-99	Qty: 100+
\$19.95	\$18.90	\$18.15

Input: 85-264 VAC 47-63Hz Universal
L: 160mm W: 98mm H: 39mm Wt: .55kg
L: 6.3" W: 3.86" H: 1.54" Wt: 1.2lb

100W SUPPLIES



STOCK #	OUTPUT	PART #	RIP/NOISE	EFF	CASE
16010-PS	3.3V/20A	HF-100W-SF3.3	100mV	77%	C
16011-PS	5V/20A	HF-100W-SF5	100mV	78%	C
16012-PS	7.5V/13.5A	HF-100W-SF7.5	100mV	82%	C
16014-PS	15V/6.7A	HF-100W-SF15	100mV	82%	C
16016-PS	48V/2.2A	HF-100W-SF48	150mV	84%	C

DISCOUNT PRICING

Qty: 1-9	Qty: 10-99	Qty: 100+
\$26.50	\$25.60	\$24.00

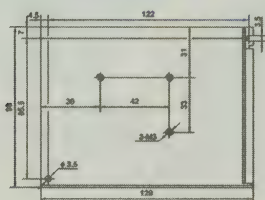
Input Selectable: 85-132 VAC 47-63Hz
170-264 VAC 47-63Hz
L: 199mm W: 98mm H: 39mm Wt: .68kg
L: 7.83" W: 3.86" H: 1.54" Wt: 1.5lb

STOCK #	OUTPUT	PART #	RIP/NOISE	EFF	CASE
16013-PS	12V/8.5A	HF-100W-SF12	100mV	82%	C
16015-PS	24V/4.5A	HF-100W-SF24	100mV	83%	C

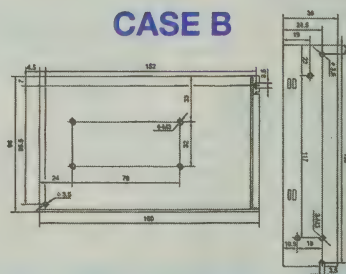
DISCOUNT PRICING

Qty: 1-9	Qty: 10-99	Qty: 100+
\$21.69	\$18.95	\$17.13

CASE A



CASE B



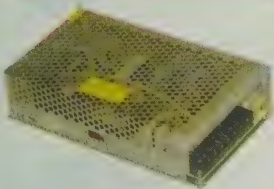
GENERAL SPECIFICATIONS

RoHS Compliant

360° VIEW
@MPJA.COM

Line Regulation (Full Load): < +/- 0.5%	MTBF: 100,000 Hours
Load Regulation: .05% (0-100%)	Operating Temp. & Humidity: -10° C to +50° C
Inrush Current: 20A/115V, 40A/230V	20%-93% Non Condensing
Input Leakage Current: <0.7mA @ 230VAC	Storage Temp. & Humidity: -20° C to +85° C
Output Adjustment Range: +/- 10%	20%-95% Non Condensing
Overload Protection: 40/60W:110-150%-100/150W: 110-130%	Cooling: Convection
Over Voltage Protection: 115-150%	Approvals/Standards:
Rise Time: 50mS Full Load (Typical)	cULus Ref. No.: E22014
Hold Up Time: 20mS Full Load (typical)	Safety: GB4943, UL60950, EN60950
Withstand Voltage (1 Min.): Input to Output: 3.0KV AC	EMC: GB9254, EN55022 class B, EN55024
Input to Frame/Ground: 1.5KV AC	-3-2/3 EN61000-4-2/3/4/5/6/8/11
Output to Frame/Ground: 0.5KV AV	

150W SUPPLIES



Input Selectable: 85-132 VAC 47-63Hz
170-264 VAC 47-63Hz
L: 199mm W:110mm H: 50mm Wt: .73kg
L: 7.83" W: 4.33" H: 1.97" Wt: 1.6lb

STOCK #	OUTPUT	PART #	RIP/NOISE	EFF	CASE
16017-PS	5V/30A	HF-150W-SF5	120mV	78%	D
16018-PS	7.5V/20A	HF-150W-SF7.5	120mV	80%	D
16019-PS	9V/17A	HF-150W-SF9	120mV	80%	D
16033-PS	28V/5.5A	HF-150W-SF28	150mV	85%	D
16034-PS	36V/4.2A	HF-150W-SF36	200mV	86%	D

DISCOUNT PRICING

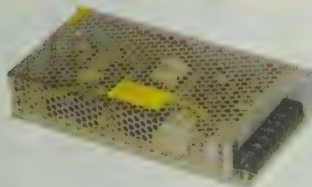
Qty: 1-9	Qty: 10-99	Qty: 100+
\$28.60	\$27.95	\$27.03

STOCK #	OUTPUT	PART #	RIP/NOISE	EFF	CASE
16020-PS	12V/12.5A	HF-150W-SF12	120mV	82%	D
16032-PS	24V/6.5A	HF-150W-SF24	150mV	85%	D

DISCOUNT PRICING

Qty: 1-9	Qty: 10-99	Qty: 100+
\$26.85	\$23.69	\$22.72

240W SUPPLIES



Input Selectable: 85-132 VAC 47-63Hz
170-264 VAC 47-63Hz
L: 199mm W:110mm H: 50mm Wt: .9kg
L: 7.83" W: 4.33" H: 1.97" Wt: 2.0lb

STOCK #	OUTPUT	PART #	RIP/NOISE	EFF	CASE
18434-PS	5V/40A	HF-240W-SF5	100mV	80%	D
18437-PS	48V/5A	HF-240W-SF48	150mV	87%	D

DISCOUNT PRICING

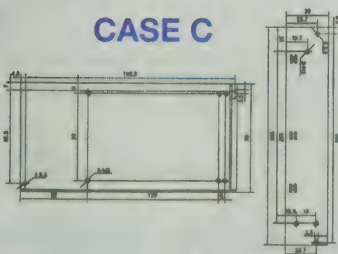
Qty: 1-9	Qty: 10-99	Qty: 100+
\$45.00	\$38.90	\$35.90

STOCK #	OUTPUT	PART #	RIP/NOISE	EFF	CASE
18435-PS	12V/18A	HF-240W-SF12	100mV	83%	D
18436-PS	24V/10A	HF-240W-SF24	120mV	85%	D

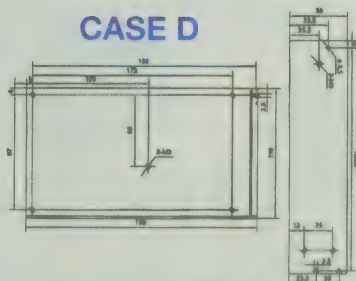
DISCOUNT PRICING

Qty: 1-9	Qty: 10-99	Qty: 100+
\$34.95	\$32.49	\$29.59

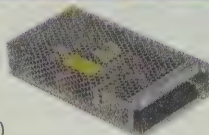
CASE C



CASE D



DUAL OUTPUT SUPPLIES



MFG: HENGFU
P/N: HF100W-DF series (See Below)
Input: 85-132/170-264VAC 50/60Hz. (Switch Select)
Output: See below
Specifications/Features: 100W, Enclosed regulated switching supply with Floating outputs. Line Reg: 0.5% Load Reg: 0.5% on 5V; 3% on #2. Over Voltage & Current protected. LED output indicator. Terminal strip In/Out. CE listed.
NOTE: For proper operation: 5V Out must be Loaded >2A
L: 7-7/8" **W:** 3-7/8" **H:** 1-5/8" **WT:** 1.6

STOCK #	SERIES	OUTPUT #1	#2	100W
18111-PS	DF-A	5V/10A	12V/4A	\$39.95
18112-PS	DF-B	5V/15A	15V/2A	\$39.95
18113-PS	DF-C	5V/15A	24V/1A	\$39.95

INDUSTRIAL 15W SUPPLIES



MFG: HENGFU
Input: 85-264VAC 47-63Hz
Output: see chart
Specifications/Features: Open Frame regulated switching supply. Over Voltage & Current protected. LED output indicator. Header In/Out. UL/US/CANADA/CE listed
L: 4.0" **W:** 1.82" **H:** 1.0" **WT:** .2

STOCK #	OUTPUT	PART #	15W
18438-PS	5V/3A	HF15W-SPL-5	\$16.99
18439-PS	12V/1.3A	HF15W-SPL-12	\$15.99
18440-PS	24V/0.6A	HF15W-SPL-24	\$15.99
18441-PS	48V/0.3A	HF15W-SPL-48	\$15.99

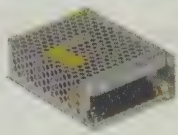
INDUSTRIAL 25W SUPPLIES



MFG: HENGFU
Input: 85-264VAC 47-63Hz
Output: see chart
Specifications/Features: Open Frame regulated switching supply. Over Voltage & Current protected. LED output indicator. Header In/Out. CE listed
L: 4.0" **W:** 1.82" **H:** 1.0" **WT:** .2

STOCK #	OUTPUT	PART #	25W
18442-PS	5V/5A	HF25W-SPL-5	\$14.95
18443-PS	12V/2.1A	HF25W-SPL-12	\$13.00
18444-PS	24V/1.1A	HF25W-SPL-24	\$13.00
18445-PS	48V/0.5A	HF25W-SPL-48	\$14.95

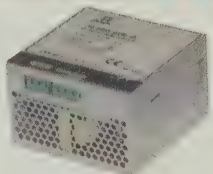
POWER SUPPLIES/CHARGER



MFG: HENGFU
P/N: HF20W-SB series (See Below)
Input: 85-264VAC 50/60Hz.
Output: See below
Specifications/Features: 20W, Enclosed regulated switching supply with Charger for Lead Acid or Lithium battery. Auto switch to battery upon AC fail (UPS). Over Voltage, Current & Low Battery protected. LED output indicator. Terminal strip In/Out. CE listed.
L: 4-3/8" **W:** 3-1/8" **H:** 1-1/2" **WT:** .6

STOCK #	SERIES	OUTPUT #1	CHARGER	10W
18116-PS	SB-12	12V/1.5A	13.8V/0.5A	\$19.95
18117-PS	SB-24	24V/0.7A	27.1V/0.2A	\$19.95

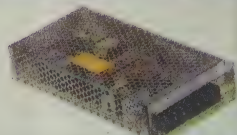
DIN RAIL POWER SUPPLIES



MFG: HENGFU
P/N: HF150-SDR Series
Input: 85-132VAC 50/60Hz
Output: 150W See Below
Specifications/Features: Compact supply mounts on TS35/7.5 or /15 DIN rails 0.5% line/load reg, 120/150mV Ripple/noise. Over Voltage/Current/Short circuit protected, LED Power out Indicator. Built-in EMI Filter. CE listed
W: 4-1/4" **H:** 4-1/4" **D:** 3-3/8" **WT:** 1.6

STOCK #	DESC	10W
17895-PS	12V/12.5A DIN Supply	\$49.95

INDUSTRIAL SUPPLIES

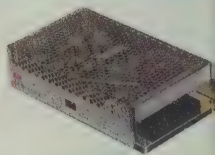


MFG: MEANWELL
Input: 120/240VAC 50/60Hz (Switch Select)
Output: see chart
Specifications/Features: Enclosed regulated switching supply. Over Voltage & Current protected. LED output indicator. Terminal strip In/Out. UL/US/CANADA/CSA/US/CANADA/CE/TUV listed

100W SUPPLIES

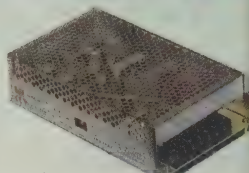
L: 7.83"	W: 3.85"	H: 1.5"	WT: 1.5	
STOCK #	OUTPUT	M/W PART #	NOISE	100W
17823-PS	5V/20A	S-100F-5	100mV	\$34.95

150W SUPPLIES



L: 7.83"	W: 4.33"	H: 1.97"	WT: 1.8
STOCK #	OUTPUT	M/W PART #	NOISE
17827-PS	5V/30A	S-150-5	150mV

9V @ 16.7A SUPPLY



MFG: MEANWELL
P/N: S-150-9
Input: 120/240VAC 50/60Hz
Output: 9VDC @ 16.7A
Specifications/Features: Enclosed regulated switching supply. Over Voltage & Current protected. LED output indicator. Terminal strip In/Out. UL/US/CANADA/CE listed.
L: 7-7/8" **W:** 4-3/8" **H:** 2" **WT:** 1.72

STOCK #	DESC	100W
18367-PS	9V/16.7A Meanwell Supply	\$19.95

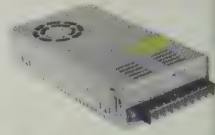
QUAD OUTPUT SUPPLY



MFG: MEANWELL
P/N: QP-200-3D
Input: 100-240VAC 50/60Hz
Output: #1: +5VDC @ 10A #2: +3.3 @ 15A #3: +24V @ 4A #4: -12V @ 0.7A
Specifications/Features: Fan cooled, Enclosed regulated switching supply with PFC, Remote Sense (V1&2) & Power Good output. Over Voltage & Current protected. LED output indicator. Terminal strip In/Out. UL/US/CANADA/TUV/CE listed.
L: 9" **W:** 4-1/2" **H:** 2" **WT:** 2.7

STOCK #	DESC	100W
18366-PS	Quad Meanwell 200W Supply	\$29.95

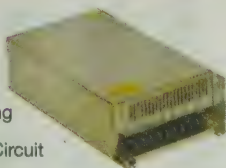
PFC POWER SUPPLIES



MFG: HENGFU
P/N: HF320W-SC
INPUT: 85-264VAC 50/60Hz
Output: See below
Specifications/Features: 320W, Power Factor corrected. High reliability Enclosed switching supplies with Internal Fan. 150mV Ripple/Noise max. Terminal strip In/Out. UL/US/CANADA/CE listed. RoHS Compliant.
 •.5% Line/load regulation
 •Overvoltage, Overcurrent, Short Circuit Protected
 •100% Full Load Burn-in Tested--Full rated to 50°C
 •No minimum load
L: 9" **W:** 4.5" **H:** 2" **WT:** 3

STOCK #	DESC	10W
31340-PS	5V/60A Power Supply/PFC	\$59.95
31342-PS	12V/25A Power Supply/PFC	\$59.95
31344-PS	24V/13A Power Supply/PFC	\$59.95

300W POWER SUPPLIES



High reliability, Enclosed, Switching power supplies.

• Overvoltage, Overcurrent, Short Circuit Protected

• 100% Full Load Burn-in Tested--Full rated to 50°C

• No minimum load

Input: 90-130 VAC Input 50/60Hz

Output: See below

L: 9.5" W: 4.9" H: 2.6" WT: 3

STOCK #	DESC.	1EA	1EA
16486-PS	5V/60A Power Supply	\$65.00	\$61.00
16487-PS	9V/33A Power Supply	\$65.00	\$61.00
16491-PS	48V/6.3A Power Supply	\$65.00	\$61.50

SELECTABLE OUTPUT SUPPLY



P/N: 9902-PS

Input: 90-250VAC 60Hz

Outputs: 3, 4.5, 6, 7.5, 9, 12VDC @ 2000mA Selectable

Specifications/Features: Enclosed, Benchtop regulated, switching supply. Switch selectable output. Front panel Power switch, Select switch & Binding posts. 6ft. 2 wire input power cord with 2 blade plug.

L: 6-1/2" W: 3-7/8" H: 2-1/4" WT: 1.1

STOCK #	DESC.	1EA
29902-PS	Multi Output Supply	\$14.95

28VDC SUPPLY



MFG: NAO

P/N: PJSP-300-1028

Input: 100-240 VAC 50/60Hz

Output: 28VDC @ 10.8A

Specifications/Features:

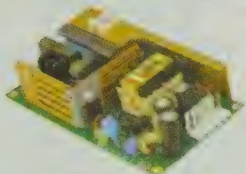
Output rated with 34CFM air flow

Power Factor corrected, Open frame switching supply with current limit & Temperature protection. 1% line/load reg. Molex connectors for input & Output (Pins & Housings Supplied), UL/usa/canada/CE listed.

L: 7-3/4" W: 5-1/4" H: 1-3/4" WT: 2.8

STOCK #	DESC.	1EA
18927-PS	28V, 10.8A Power Supply	\$29.95

24V @ 2.5A SUPPLY



MFG: XP POWER

P/N: ECM60US24

Input: 100-240VAC 50-60Hz

Output: 24VDC @ 2.5A

Specifications/Features: USED Open frame Switching power supply. .5% Line/1% Load Regulation. Header Pins in & out. CSA/TUV/CE Listed.

L: 4-1/4" W: 2-1/2" T: 1-1/2" WT: .4

STOCK #	DESC.	1EA
31485-PS	24V/2.5A Power Supply	\$3.95

24V @ 2.1A SUPPLY



MFG: CONDOR

P/N: GL50-24

Input: 100-240VAC 50-60Hz

Output: 24VDC @ 2.1A

Specifications/Features: USED Open frame Switching power supply. 2% total Regulation. 100mA min load. Header Pins in & out. UL/us/canada/TUV/CE Listed.

L: 4-1/4" W: 2-1/2" T: 1-1/2" WT: .42

STOCK #	DESC.	1EA
31486-PS	24V @ 2.5A Condor Supply	\$3.95

INDUSTRIAL 25W SUPPLIES



MFG: HENGFU

Input: 85-264VAC 47-63Hz

Output: See Below

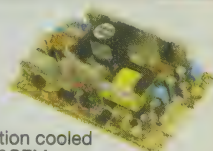
Specifications/Features:

Enclosed switching supply. Over voltage and short circuit protected, .5% Line/load regulation, LED output indicator. Terminal strip In/Out. UL/CE Listed. RoHS Compliant.

L: 3.88" W: 3.23" H: 1.38" WT: .6

STOCK #	OUTPUT	PART #	1EA
17320-PS	3.3V/6A	HF25W-SL-3.3	\$14.90
17321-PS	5V/5A	HF25W-SL-5	\$14.90
17322-PS	12V/2.1A	HF25W-SL-24	\$14.90
17323-PS	15V/1.7A	HF25W-SL-15	\$14.90
17325-PS	48V/0.57A	HF25W-SL-48	\$14.90

15V/3A SUPPLY



MFG: MEANWELL

P/N: PS-45-15

Input: 100-240VAC 50-60Hz

Output: 15VDC @ 3A 45W Convection cooled

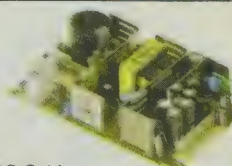
52W max Fan cooled @ 18CFM

Specifications/Features: Open frame Switching power supply. 1% line/2.0% load Regulation. Over Voltage & Current protected. Header Pins in & out. UL/us/canada/TUV/CE Listed.

L: 5" W: 3" T: 1-1/2" WT: .4

STOCK #	DESC.	1EA
31506-PS	15V 3A Meanwell Supply	\$14.90

5V & 12V & 3.3V SUPPLY



MFG: PowDec

P/N: UPN65-31

Input: 115/230VAC 50/60Hz

Outputs: #1: +5VDC @ 10A

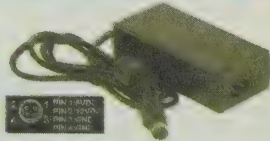
#2: +3.3VDC @ 10A #3: +12VDC @ 1A

Specifications/Features: Max. output 65W, Open frame switching supply. 3.0% Load Regulation (Vout 1 & 2/10% V3), Current Limit. Req. minimum load, Rated to 70 Deg. "C". UL/canada/usa/TUV/CE listed.

L: 5" W: 3" H: 1-3/8" WT: .8

STOCK #	DESC.	1EA
18847-PS	PowDec 3 Output Supply	\$4.95

5V & 12VDC @ 2A SUPPLY



MFG: LACIE

P/N: ACU034A-0512

Input: 100-240 VAC 50-60Hz

Output: #1: +5V @ 2A #2: +12V 2A

Specifications/Features: USED, Switching desktop supply with overvoltage & current limit protection. Non-polarized 2 wire IEC Type 2-C8 input connector. 4ft output cord with 4 Pin Kycon KPPX connector. UL/canada/usa/TUV/CE listed.

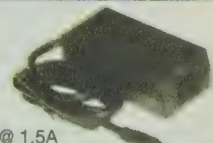
Power Cord NOT included.

ORDER CORD: Stock # 15447-CB

L: 4-1/4" W: 2" H: 1-1/8" WT: .52

STOCK #	DESC.	1EA
19072-PS	5 & 12V @ 2A Desktop Supply	\$4.95

5V & 12VDC SUPPLY



MFG: PART II RESEARCH

P/N: AC-005W

Input: 100-240 VAC 50/60Hz

Output #1: +5V @ 2.2A #2: +12V @ 1.5A

Specifications/Features: Removed from New Equip. Desktop switching supply. Over current protection. Std. IEC 3 wire input connector. 4ft. output cable with 4Pin Mini DIN connector. UL/canada/usa/VDE/CE Listed.

Power Cord NOT included: ORDER STOCK # 12943 CB

L: 4-1/2" W: 2" H: 1-1/2" WT: .7

STOCK #	DESC.	1EA
15955-PS	5V & 12V Desktop Supply	\$5.95

5V @ .3A SUPPLY



MFG: SUNNY
P/N: SYS1306-305-W2
Input: 100-240VAC 50-60Hz
Output: 5VDC @ 0.3A
Specifications/Features: Switching Power adapter. 2 Blade input, 2in. output cord with a USB Type A Female connector. UL/us/canada Listed.

H: 2"	W: 1-1/4"	T: 1-1/5"	WT: .18
STOCK #	DESC.	1EA	
32303-PS	5V @ .3A Sunny Supply		\$2.49

USB 5V @ 1A SUPPLY



MFG: AK TECH. for TOMTOM
P/N: A05T2-05MU
Input: 100-240 VAC 47/63Hz
Output: 5VDC @ 1A
Specifications/Features: Switching plug supply with additional interchangeable line plugs for: US, The EU, Australia and Britain, overvoltage & current limit protection. Non-Polarized input, USB Type A Female for output. includes 4ft USB Type A Male to USB Mini-B Male. UL/canada/usa/TUV/GP/CE listed.

L: 2-1/8" Body/us plug	W: 1-3/4"	D: 1-1/8"	WT: .4
STOCK #	DESC.	1EA	
18608-PS	5V @ 1A Universal Supply		\$3.95

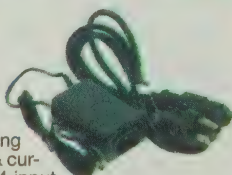
5V @ 4A SUPPLY



MFG: PHIHONG
P/N: PSA30U-050
Input: 100-240 VAC 50/60Hz
Output: 5VDC @ 4A
Specifications/Features: Switching adapter supply with overvoltage & current limit protection. Std. IEC C14 input connector. 5ft output cord with 10mm X 5.5/2.1mm ID Rt. Angle coaxial plug, Center +. UL/us/canada/TUV/CE listed. Power Cord NOT Included. ORDER: Stock #31447-CB

L: 4-1/2"	W: 2-3/8"	T: 1-3/8"	WT: .7
STOCK #	DESC.	1EA	
30335-PS	5V @ 4A Phihong Supply		\$8.95

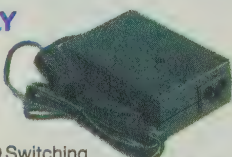
9V @ 1A SUPPLY



MFG: AULT
P/N: PW107
Input: 100 -240VAC 50/60Hz
Output: 9VDC @ 1A
Specifications/Features: Switching adapter supply with overvoltage & current limit protection. Std. IEC C14 input connector. 5ft output cord with 10mm X 5.5/2.5mm ID coaxial plug Center +. UL/us/canada/TUV/CE listed. Power Cord included.

L: 3"	W: 1-3/4"	T: 1-1/4"	WT: .7
STOCK #	DESC.	1EA	
32214-PS	9V @ 1A Plug Supply		\$4.95

12V @ 1.25A SUPPLY



MFG: DELTA
P/N: EADP-15PB-B
Input: 100-240 VAC 50/60Hz
Output: 12VDC @ 1.25A
Specifications/Features: USED Switching Desktop supply with overvoltage & current limit protection. 3 wire IEC Type 1-C6 input connector. 6ft output cord with 10mm L X 5.5mm/2.5mm ID coaxial plug, Center +. UL/canada/usa/TUV/CE listed. Power Cord NOT included. ORDER CORD: Stock #32466-CB

L: 3-1/2"	W: 2-3/8"	D: 1-3/16"	WT: .4
STOCK #	DESC.	1EA	
31825-PS	12V @ 1.25A Used Delta Supply		\$4.95

5V @ 2A SUPPLY



MFG: LEADER
P/N: MT15-5050200-A1
Input: 100-120VAC 50-60Hz
Output: 5VDC @ 2A
Specifications/Features: USED Switching Power adapter. 2 Blade input, 6ft output cord with 10mm L X 3.8mm/1.35mm ID coaxial plug, Center +. UL/us/canada Listed.

H: 2-3/4"	W: 1-7/8"	T: 1-1/2"	WT: .35
STOCK #	DESC.	1EA	
31484-PS	5V @ 2A Leader Supply		\$2.95

5V @ 4A SUPPLY



MFG: OPENPEAK
P/n: OP 20004
Input: 90-132 VAC 60Hz
Output: 5VDC @ 4A
Specifications/Features: Switching plug supply with overvoltage & current limit protection. Non-Polarized 2 blade input. 6ft output cord with 10mm X 5.5/2.1mm ID Right Angle coaxial plug Center +. UL/canada/usa/listed. RoHS compliant.

H: 3-3/8"	W: 1-1/2"	T: 2-1/4"	WT: .3
STOCK #	DESC.	1EA	
18520-PS	5V @ 4A Plug Supply		\$8.95

5VDC 2A SUPPLY



P/N: XA1005-2U
Input: 100-240 VAC 50/60Hz
Output: 5VDC @ 2A
Specifications/Features: Switching plug supply with overvoltage & current limit protection. 2 blade input folds into case for tangle free storage. Dual USB Type A for outputs. UL/canada/usa/CE listed. RoHS compliant.

L: 2-3/4"	W: 1-3/4"	T: 1-1/8"	WT: .14
STOCK #	DESC.	1EA	
32736-PS	5VDC, 2A USB Wall Supply		\$3.95

9V @ 1.0A SUPPLY



MFG: KENWOOD
Input: 100-240 VAC 47-63Hz
Output: 9VDC @ 1.0A
Specifications/Features: Switching Plug supply with overvoltage & current limit protection. Non-polarized 2 blade input connector. 6ft output cord with 4.7mm OD/1.7mm ID coaxial plug Center +. UL/us/canada Listed

H: 3"	W: 1-3/8"	D: 1"	WT: .17
STOCK #	DESC.	1EA	
19463-PS	9V/1.0A Kenwood Supply		\$2.95

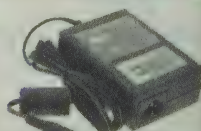
12V @ 1.25A SUPPLY



MFG: WATCHGUARD
P/N: GT-41052-1512
Input: 100-240 VAC 50/60Hz
Output: 12VDC @ 1.25A
Specifications/Features: Switching adapter supply with overvoltage & current limit protection. Non-Polarized 2 Blade input 5ft. output cord with 5.5/2.5mm Coaxial Plug Center +. UL/us/canada listed. RoHS compliant.

L: 2-7/8"	W: 1-5/8"	T: 1-3/8"	WT: .4
STOCK #	DESC.	1EA	
32450-PS	12V @ 1.25A Adapter		\$5.95

12V @ 1.25A SUPPLY



MFG: DELTA
P/N: EADP-15PB-B
Input: 100-240 VAC 50/60Hz
Output: 12VDC @ 1.25A
Specifications/Features: Switching Desktop supply with overvoltage & current limit protection. 3 wire IEC Type 1-C6 input connector. 6ft output cord with 10mm L X 5.5mm/2.5mm ID coaxial plug, Center +. UL/canada/usa/TUV/CE listed. Power Cord NOT included. ORDER CORD: Stock #32466-CB

L: 3-1/2"	W: 3-3/8"	D: 1-3/16"	WT: .45
STOCK #	DESC.	1EA	
32686-PS	12V @ 1.25A Plug Supply		\$5.95

12V @ 1.5A SUPPLY

MFG: APD
P/N: WA-18G12U
Input: 100-240 VAC 50/60Hz
Output: 12VDC @ 1500mA (1.5A)
Specifications/Features: USED Switching plug supply with overvoltage & current limit protection. Non-Polarized 2 blade input. 6ft output cord with 10mm L X 5.5/2.5mm ID coaxial plug Center +. UL/canada/usa listed.

L: 2-7/8" **W:** 1-7/8" **T:** 1-1/2" **WT:** .3

STOCK #	DESC.	1EA
32549-PS	12V @ 1.5A APD Plug Supply	\$6.95



12V @ 1.67A SUPPLY

MFG: DELTA
P/N: EADP-20DB A
Input: 100-240 VAC 50/60Hz
Output: 12VDC @ 1.67A
Specifications/Features: USED, Switching adapter supply with overvoltage & current limit protection. 2 wire IEC Type 2-C8 input connector. 6ft output cord with 10mm L X 5.5mm/1.5mm ID coaxial plug Center +. UL/canada/usa/CE listed. **Power Cord NOT included.** **ORDER: Stock #15447-CB**

L: 4-1/2" **W:** 2" **D:** 1-1/8" **WT:** .36

STOCK #	DESC.	1EA
30262-PS	12V @ 1.67A Delta Supply	\$9.95



12V @ 2A PLUG SUPPLY

MFG: HELMS-MAN
P/N: SEB1202000P
Input: 100-240VAC 50-60Hz
Output: 12VDC @ 2000mA
Specifications/Features: Regulated, switching power adapter. Non-polarized 2 Blade input, 6ft. output cord with a 15 mm long X 5.5mm/2.1mm Right Angle coaxial connector Center Positive. CSA/us/canada/CE Listed.

L: 3" **W:** 2" **T:** 1-1/2" **WT:** .32

STOCK #	DESC.	1EA
31828-PS	12V @ 2A Wall Supply	\$6.95

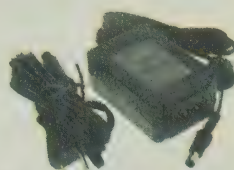


12VDC @ 2A SUPPLY

MFG: SINO-AMERICAN
P/N: SA124C-12U
Input: 100-240 VAC 50/60Hz
Output: 12VDC @ 2A
Specifications/Features: Switching adapter supply with overvoltage & current limit protection. Non-polarized, 2 wire IEC Type 2-C8 input connector. 5ft output cord with 10mm L X 5.5mm/2.1mm ID coaxial plug Center +. UL/canada/usa/TUV/CE listed. **4ft. Power Cord included.**

L: 3-1/8" **W:** 2" **T:** 1-3/16" **WT:** .45

STOCK #	DESC.	1EA
32483-PS	12V @ 2A Sino Supply	\$7.95

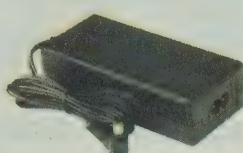


12V @ 2.5A SUPPLY

MFG: DELTA
P/N: EADP-30FB A
Input: 100-240 VAC 50/60Hz
Output: 12VDC @ 2.5A
Specifications/Features: USED, Switching supply with overvoltage & current limit protection. 2 wire IEC Type 2-C8 input connector. 6ft output cord with 10mm L X 5.5mm/2.1mm ID Rt. Angle coaxial plug Center +. UL/canada/usa/CE listed. **Power Cord NOT included.** **ORDER CORD: Stock #15447-CB**

L: 4-3/4" **W:** 2" **D:** 1-1/4" **WT:** .42

STOCK #	DESC.	1EA
30226-PS	12V/2.5A Delta Supply	\$5.95

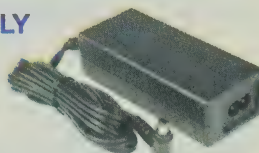


12V @ 2.5A SUPPLY

MFG: LEADER
P/N: NU30-4120250-13
Input: 100-120 VAC 47-63Hz
Output: 12VDC @ 2.5A
Specifications/Features: USED, Switching adapter supply with overvoltage & current limit protection. Non-polarized 2 wire IEC Type 2-C8 input connector. 5ft output cord with 10mm X 5.5/2.1mm ID coaxial plug Center +. UL/us/canada/CSA/CE listed. **Power Cord NOT included.** **ORDER CORD: 15447-CB**

L: 4-1/2" **W:** 1-7/8" **T:** 1-3/8" **WT:** .44

STOCK #	DESC.	1EA
30201-PS	12V @ 2.5A Leader Supply	\$6.95



12V @ 2.5A SUPPLY

MFG: NETGEAR
P/N: SAS030F1
Input: 100-120 VAC 47-63Hz
Output: 12VDC @ 2.5A
Specifications/Features: Removed From New Equipment Switching plug supply with overvoltage & current limit protection. Non-Polarized 2 blade input. 6ft output cord with 10mm X 5.5/2.1mm ID coaxial plug Center +. UL/canada/usa/TUV listed.

H: 3-1/8" **W:** 1-3/8" **T:** 2-1/8" **WT:** .3

STOCK #	DESC.	1EA
33380-PS	12V @ 2.5A Plug Supply	\$6.95



12V @ 2.67A SUPPLY

MFG: DELTA
P/N: EADP-32BB-A
Input: 100-127 VAC 60Hz
Output: 12VDC @ 2.67A
Specifications/Features: USED Switching supply with overvoltage & current limit protection. Attached, 3ft, 2 wire Polarized input cord. 6ft output cord with 10mm L X 5.5mm/2.1mm ID coaxial plug Center +. UL/canada/usa listed. **ROHS Compliant.**

L: 4-7/8" **W:** 2-1/8" **T:** 1" **WT:** .65

STOCK #	DESC.	1EA
33190-PS	12V @ 2.67A Delta Adapter Supply	\$5.95



12V @ 2.67A SUPPLY

MFG: LITE-ON
P/N: PB-1320-01C-ROHS
Input: 100-127 VAC 60Hz
Output: 12VDC @ 2.67A
Specifications/Features: USED Switching supply with overvoltage & current limit protection. Attached, 3ft, 2 wire input cord. 6ft output cord with 10mm L X 5.5mm/2.1mm ID coaxial plug Center +. UL listed. **ROHS Compliant.**

L: 5-1/8" **W:** 2-1/4" **T:** 1-1/8" **WT:** .8

STOCK #	DESC.	1EA
33189-PS	12V @ 2.67A Lite-On Adapter Supply	\$6.95



12V @ 5A SUPPLY

MFG: LITE-ON
P/N: PB-1600-02SA-ROHS
Input: 100-240 VAC 50/60Hz
Output: 12VDC @ 5A
Specifications/Features: Switching supply with overvoltage & current limit protection. Attached, 6ft, 2 wire input cord. 6ft output cord with 10mm L X 5.5mm/2.1mm ID coaxial plug Center +. UL listed. **ROHS compliant.**

L: 5-1/8" **W:** 2" **T:** 1-1/8" **WT:** .9

STOCK #	DESC.	1EA
33120-PS	12V @ 5A Adapter Supply	\$12.95



15V @ 900MA PLUG SUPPLY



MFG: iConnect

P/N: IU15-2150090-WP

Input: 100-240 VAC 50/60Hz

Output: 15VDC @ 0.9A

Specifications/Features: Switching Power adapter. Interchangeable 2 Blade US or 2 Pin Europlug input. 6ft output cord with 10mm L. X 5.5mm/2.5mm ID coaxial plug, Center +. UL/us/canada/CE Listed.

H: 3"

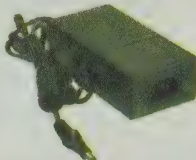
W: 1-7/8"

T: 1-1/2"

WT: .43

STOCK #	DESC.	1EA
32486-PS	15V @ 0.9A Plug Supply	\$2.50

16.3V @ 1.84A SUPPLY



Input: 100-240VAC 50-60Hz

Output: 16.3VDC @ 1.84A

Specifications/Features: USED, Switching Power adapter. Std. IEC C13 input connector. 4ft output cord with 10mm L. X 5.5mm/2.1mm ID coaxial plug, Center - (Minus). UL/CSA Listed. **Power Cord NOT included. ORDER CORD: Stock #31447-CB**

L: 5"

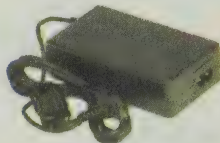
W: 2-1/2"

T: 1-1/2"

WT: .82

STOCK #	DESC.	1EA
31482-PS	16V @ 1.84A Supply	\$3.05

16V @ 3.36A SUPPLY



MFG: FUJITSU

P/N: CA01007-0610

Input: 100-240 VAC 47-63Hz

Output: 16VDC @ 3.36A

Specifications/Features: Switching Adapter supply with overvoltage & current limit protection Non-polarized 2 wire IEC Type 2-C8 input connector. 6ft output cord with ferrite filter & with EIAJ-5320A Type 5 Right Angle Connector (6.5mmOD with 1.4mm ctr. pin) Center +. UL/canada/usa/TUV/CE listed. **Power Cord NOT included. ORDER CORD: Stock #15447-CB**

L: 4-1/4"

W: 2-3/8"

H: 1-1/4"

WT: .8

STOCK #	DESC.	1EA
18468-PS	16V @ 3.36A Fujitsu Supply	\$14.95

16V @ 4.5A SUPPLY



MFG: LENOVA/IBM

P/N: 92P1020

Input: 100-240VAC 50-60Hz

Output: 16VDC @ 4.5A

Specifications/Features: Think Pad Switching Power adapter. Non-Polarized 2 wire IEC Type 2-C8 input connector. 6ft output cord with 10mm L. X 5.5mm/2.5mm ID coaxial plug, Center +. UL/us/canada/CSA/TUV/CE Listed. **Power Cord NOT included. ORDER CORD: Stock # 15447-CB**

L: 5"

W: 2"

T: 1-1/8"

WT: .9

STOCK #	DESC.	1EA
31476-PS	16V @ 4.5A IBM Supply	\$9.95

19V @ 2.6A SUPPLY



MFG: GLOBTEK

P/N: EGS-1043

Input: 100-240 VAC 47-63Hz

Output: 19VDC @ 2.65A

Specifications/Features: Switching desktop supply with overvoltage & current limit protection. Non-polarized 2 wire IEC Type 2-C8 input connector. 6ft output cord with ferrite filter & a Hirose RP34L-5PA-2 series Bi-Pin connector. UL/canada/usa/CE listed. **Power Cord NOT included. ORDER CORD: Stock # 15447-CB**

L: 4-3/4"

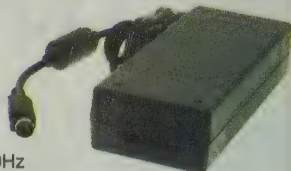
W: 2-3/8"

H: 1-3/8"

WT: .7

STOCK #	DESC.	1EA
18903-PS	19V @ 2.6A Glotek Supply	\$3.95

24V @ 5A SUPPLY



MFG: MEGMEET

P/N: Mango240-0500AY

Input: 100-240 VAC 50-60Hz

Output: 24V, 5A

Specifications/Features: Switching desktop supply with over-voltage & current limit protection. Std. IEC C14 input connector 4-1/2ft output cord with 4 Pin Kycon KPPX connector (Mate Not Supplied). TUV/CE listed.

Mating Panel Mount KPPX Connector: Order 33004-PL Power Cord included.

L: 6-3/8"

W: 2-1/2"

T: 1-1/2"

WT: 1.4

STOCK #	DESC.	1EA
32885-PS	24V @ 5A Plug Supply	\$14.95

48V, 100W SUPPLY



MFG: XP POWER

P/N: AEB100PS48

Input: 100-240 VAC 47/63Hz

Output: 48VDC @ 2.08A

Specifications/Features: Switching Power adapter. 1% Line/2% Load Regulation. Over Voltage & Current Protected. Std. IEC C14 input connector. 4ft output cord with a Right Angle 12mm X 5.5/2.5mm ID coaxial plug Center +. ENUL/us/canada/TUV/CE listed. **Power Cord not included. Order Cord: Stock # 31447-CB**

L: 6"

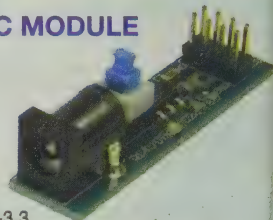
W: 2-3/4"

T: 1-3/8"

WT: 1.4

STOCK #	DESC.	1EA
32492-PS	48V @ 2.08A Plug Supply	\$18.95

AUXILIARY 3.3VDC MODULE



Compact, Non-isolated, 3.3V linear voltage regulator module utilizing a AMS1117-3.3 three terminal LDO regulator. Quick connect barrel jack for input voltage. Features: On/Off switch and Power On LED. Output on 2X4 pin (4Gnd & 4 +5VDC) Header for easy hookup to breadboard or project
Input: 4.5 - 12VDC
Output: 3.3VDC @ 1A
Regulation: 0.1%
Output: 8Pin (2X4) 0.1in. Pitch Header
Input: 5.5/2.1mm Coaxial Power Jack

L: 1-15/16"

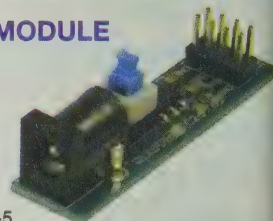
W: 1/2"

T: 5/8"

WT: .02

STOCK #	DESC.	1EA
31947-MP	3.3V Power Regulator	\$1.95

AUXILIARY 5VDC MODULE



Compact, Non-isolated, 5V linear voltage regulator module utilizing a AMS1117-5 three terminal LDO regulator. Quick connect 5.5mm barrel jack for input voltage. Features On/Off switch and Power On LED. Output on 2X4 pin (4Gnd & 4 +5VDC) Header for easy hookup to breadboard or project.
Input: 6.5 - 12VDC
Output: 5VDC @ 1A
Regulation: 0.1%
Output: 8Pin .1in. Pitch Header
Input: 5.5/2.1mm Coaxial Power Jack

L: 1-15/16"

W: 1/2"

T: 5/8"

WT: .02

STOCK #	DESC.	1EA
31599-MP	5V Power Regulator	\$1.95

ADJ. BOOST CONVERTER

IMPROVED, Non Isolated, Step up (Boost) adjustable DC/DC Converter using newer XL6009 IC, Ideal Point-of-Use regulator switching Regulator board.

Input: 3-32VDC

Output: 5-35VDC

Rated Current: 2A (Heatsink Above 10W Output)

Regulation: 0.5%

L: 1-11/16" W: 7/8" H: 5/8" WT: .02

STOCK #	DESC.	1EA
31397-PS	Adj. 2A DC/DC Boost Converter	\$4.95



ADJ. DC/DC BUCK CONVERTER

Non Isolated, LM2596 Step down adjustable DC/DC Converter, switching Regulator board. Ideal Point-of-Use regulator.

Input: 4.5-40VDC

Output: 1.5-37VDC

Rated Current: 2A (Heatsink above 10W Output)

Regulation: 0.5%

L: 2-1/8" W: 1-1/8" H: 1/2" WT: .03

STOCK #	DESC.	1EA
30148-PS	Adj. 2A DC/DC Converter	\$3.95



ADJ. DC/DC CONVERTER/METER

Non Isolated, adjustable DC/DC Buck Converter, switching Regulator with built-in 3digit LED Voltmeter. Pressing Onboard switch cycles through display of: Input, Output & press & hold for Display Off.

Regulator

Input: 4.5-40VDC

Output: 1.5-37VDC

Rated Current: 2A

Regulation: 0.5%

Meter

Resolution: $\pm 0.1V$

Range: 4-40V

4VMin Input Volts to Board for Meter Operation

L: 2-5/8" W: 1-7/16" H: 1/2" WT: .06

STOCK #	DESC.	1EA
30149-PS	Adj. DC/DC Converter/Meter	\$9.95



CV/CC DC/DC CONVERTER

Non Isolated, adjustable DC/DC Buck (Step Down) Converter, Driver, Regulator with adjustable Constant Voltage out or adjustable Constant Current output for charging batteries or driving LEDs.

Input: 5-35VDC Output: 1.5-30VDC

Input/Output Differential: 2V min.

Rated Current: 3A (10Watt limit without Heatsink)

Current limit: adj. 0-3A sets Max current

Charge Adj. : sets the threshold of toggle the Charge/Full

Charge LEDs

Regulation: 1%

L: 2" W: 15/16" T: 5/8" WT: .06

STOCK #	DESC.	1EA
31562-PS	Adj. Volt & Current Supply	\$4.95



ADJ. BOOST CONVERTER

Higher power, Non Isolated, Step up (Boost) adjustable Converter with In/Out Voltmeter. Uses a LTC1871 Chip and a power MOS transistor with heatsink.

Onboard switch for selecting Input or Output readout on meter and a switch to turn the meter on/off.

Solder/Terminal strip In/Out. Includes standoffs.

Input: 3-30VDC

Output: 5-35VDC

Rated Current: 6A (50W/maxOutput)

Regulation: 1%

L: 2-5/8" W: 1-3/4" H: 1/2" WT: .08

STOCK #	DESC.	1EA
31936-PS	Adj. 50W DC Boost Converter	\$12.95



ADJ. BOOST CONVERTER/METER

Non Isolated, Step up (Boost) adjustable Converter with In/Out Voltmeter. Uses a LM2577 Chip. Onboard switch for selecting Input or Output readout on meter. Hold switch 3sec. to turn the meter off.

Solder/Terminal strip In/Out.

Input: 3-34VDC

Output: 4-35VDC

Rated Current: 2.5A Max.

Display: 3Digit Red 3/8" LED

Resolution: $\pm 0.1V$

Notes: Input must exceed 4V for the Display to function

Output Voltage setting must be higher than Input

Input current increases as the In/Out Voltage difference increases.

Heatsink needed for input or output exceeding 10W

L: 2-5/8" W: 1-3/8" H: 1/2" WT: .04

STOCK #	DESC.	1EA
32051-PS	Adj. DC Boost Converter/Meter	\$7.95



5VDC/DC CONVERTER

MFG: LUCENT (Now TYCO)

P/N: JC030A1-29M

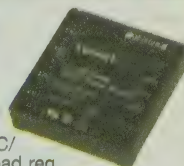
Input: 18-36V DC

Output: 5V DC 6A

Specifications/Features: Sealed DC/DC converter module. .1% line/1.2% load reg. 150mV P/P ripple, short circuit protected, remote sense, remote On/Off (Low-On/High-Off), 500V Isolation. UL, CSA, VDE Listed

L: 2.4" W: 2.28" H: .5" WT: .2

STOCK #	DESC.	1EA
19320-PS	5V Lucent DC/DC Module	\$6.95



WIDE INPUT DC/DC CONVERTERS

MFG: CALEX

P/N: CUSTOM

Input: 9-36V DC

Output: Listed Below

Specifications/Features: Custom DC/DC converter module. short circuit protected, remote sense, remote On/Off (Low-On/High-Off), 500V isolation. RoHS

L: 3" W: 2-9/16" H: 13/16" WT: .5

STOCK #	DESC.	1EA
32174-PS	5.8V Calex DC/DC Module	\$12.95
32175-PS	9.8V Calex DC/DC Module	\$12.95



12V@3.8A DC/DC CONVERTER

MFG: IPS

P/N: PD65-12-LC

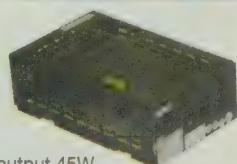
Input: 10-30VDC (24V Nom)

Output: 12V @ 3.8A

Specifications/Features: Max. output 45W Enclosed, DC input switching supply. 0.5% line Reg./1% load Reg, 1%P/P noise/ripple. Header pins for Input & Output connections.

L: 6-3/4" W: 4-1/8" H: 2-1/8" WT: 1.3

STOCK #	DESC.	1EA
18132-PS	24V to 12V, 3.8A DC/DC Converter	\$4.95



AUXILIARY ADJUSTABLE REGULATOR

Compact, Non-isolated, adj. linear voltage regulator module utilizing a LM317 IC for a wide range input/output voltages. Built in heat sink and filter capacitors. Ten turn voltage adjustment pot. Easy to connect terminal strips for input/output voltage. Small enough to build into projects. Ideal for converting 5V to 3.3V on those Arduino experiments.

Input: 4.2 - 40VDC

Output Voltage: Vin -3V (4.2V-40Vin) Output Current 1.5 A

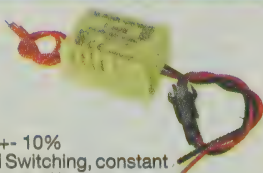
Regulation 0.01%/V

L: 1-7/16" W: 5/8" T: 1" WT: .02

STOCK #	DESC.	1EA
31800-PS	Adjustable Power Regulator	\$1.95



AC LINE POWERED 3W LED DRIVER



Input: 85-265VAC 50-60Hz
Output: 3V-13VDC @ 300mA +- 10%
Specifications/Features: Mini Switching, constant current LED driver for driving one 3W or three to four 1W LEDs. 3" AC leads, 4" DC Leads with 2 Pin connector with mating pig tail. CE Listed
 Indoor use only Not for use with Dimmers.

L: 1-1/2" W: 1" H: 13/16" O/A WT: .02

STOCK #	DESC.	1EA
31536-PS	12VDC 3W LED Driver	\$1.95

AC LINE POWERED 10W LED DRIVER



Input: 90-264VAC 50-60Hz
Output: 12VDC @ 900mA +- 5%
Specifications/Features: Sealed metal & plastic cased, Mini Switching constant current LED driver for driving one 10W or three to four 3W or nine 1W connected as 3 parallel groups of 3 in series. 5" AC leads, 6" DC Leads. CE Listed
 IP67 sealed for damp locations.
 Not for use with Dimmers.

L: 3-1/8" W: 1-1/8" H: 7/8" WT: .2

STOCK #	DESC.	1EA
32817-PS	90-264VAC 10W LED Driver	\$3.95

AC LINE POWERED 20W LED DRIVER

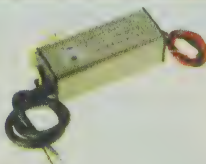


Input: 110-260VAC 50-60Hz
Output: 28V-40VDC @600mA +- 5%
Specifications/Features: Sealed metal & plastic cased, Mini Switching constant current LED driver for driving one 20W, Two 10W connected in series or six to nine 3W series/parallel LEDs. 12" AC leads, 10" DC Leads. CE/RoHS Listed
 IP65 sealed for damp locations.
 Not for use with Dimmers.

L: 3-5/8" W: 1-3/16" T: 7/8" WT: .22

STOCK #	DESC.	1EA
31538-PS	20W LED Driver Supply	\$5.95

AC LINE POWERED 30W LED DRIVER

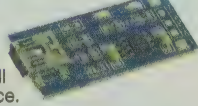


Input: 110-260VAC 50-60Hz
Output: 28V-40VDC @600mA +- 5%
Specifications/Features: Sealed metal & plastic cased, Mini Switching constant current LED driver for driving one 20W, Two 10W connected in series or six to nine 3W series/parallel LEDs. 12" AC leads, 10" DC Leads. CE/RoHS Listed
 IP65 sealed for damp locations. Not for use with Dimmers.

L: 3-5/8" W: 1-3/16" T: 7/8" WT: .22

STOCK #	DESC.	1EA
31539-PS	30W LED Driver Supply	\$8.95

BATTERY CHARGING MODULE

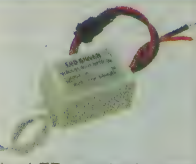


1A Charger for Lithium Cell
 Compact module for charging 4V Li. cell from a USB Port or external DC source. Utilizes a TP4056 charger IC. Input "TEMP" pad for connecting to the Cell NTC thermistor (if available). If not used this pin should be grounded (-)
 Power: 4-8VDC External or 5V From USB Port.
 Current: 1A peak 1/10th. at Float
 Connections: Mini B Female for Port charging
 Solder pad for external source
 Solder pads for Cell Connections
 LED Indicator for Charging and one for Charged. NOTE: Do not connect External supply while connected to USB Port.

L: 1-5/8" O/A W: 5/8" H: 1/4" WT: .01

STOCK #	DESC.	1EA
31598-MP	1A Li. Cell Charger	\$1.95

12VAC/DC 3W LED SUPPLY

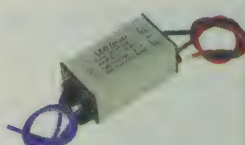


Input: 12VAC/DC
Output: 3V-13VDC @ 300mA+- 10%
Specifications/Features: Mini Switching LED constant current LED driver for driving one 3W or three 1W LEDs. 3" DC Input leads, 4" DC Output Leads with a 2 Pin connector. Included is the mating connector pig tail.
 Indoor use only.

L: 2-1/16" W: 1-1/2" H: 13/16" WT: .02

STOCK #	DESC.	1EA
31556-PS	12VAC/DC 3W LED Driver	\$1.95

12VAC/DC 10W LED SUPPLY

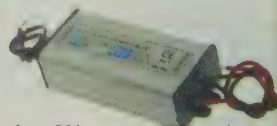


Input: 12-24VAC/DC
Output: 6V-12VDC @ 900mA +- 5%
Specifications/Features: Sealed metal & plastic cased, Mini Switching constant current LED driver for driving one 10W or three to four 3W connected in series or nine 1W connected as 3 parallel groups of 3 in series. 3" DC Input leads, 6" DC Output Leads.
 IP65 sealed for damp locations. Not for use with Dimmers.

L: 2-3/8" W: 1" T: 13/16" WT: .1

STOCK #	DESC.	1EA
31557-PS	12VAC/DC 10W LED Driver	\$3.95

12VDC 20W LED SUPPLY

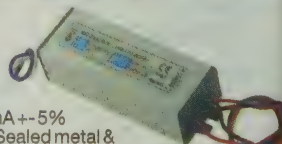


Input: 12-24VDC
Output: 20V-40VDC @ 600mA +- 3%
Specifications/Features: Sealed metal & plastic cased, Mini Switching constant current LED driver for driving one 20W, two 10W connected in series or six to nine 3W series/parallel LEDs. 3" DC Input leads, 8" DC Output Leads. CE/RoHS Listed
 IP67 sealed for damp locations. Not for use with Dimmers.

L: 3-7/8" W: 1-1/2" T: 1-1/8" WT: .36

STOCK #	DESC.	1EA
31558-PS	12VAC/DC 20W LED Driver	\$8.95

12VDC 30W LED SUPPLY

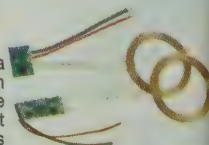


Input: 12-24VDC
Output: 20V-40VDC @ 900mA +- 5%
Specifications/Features: Sealed metal & plastic cased, Mini Switching constant current LED driver for driving one 30W, Three 10W connected in series or ten 3W series/parallel LEDs. 3" DC Input leads 8" DC Output Leads. CE/RoHS Listed
 IP67 sealed for damp locations. Not for use with Dimmers.

L: 4-1/2" W: 1-1/2" T: 1-3/16" WT: .42

STOCK #	DESC.	1EA
31559-PS	12VAC/DC 30W LED Driver	\$6.95

WIRELESS CHARGER



Inductive coupled pair consisting of a "transmitter" and "receiver" each with a small, flat coil. Designed to charge phones, players etc. Transmitter unit takes the DC input power and converts it to a high frequency which is coupled to the receiving unit that converts it back to a DC voltage. Power available is proportional to the distance & alignment the coils.
 2-3/8" power leads.
Input: 13.5VDC max 12V nominal
Output: 5VDC @ 600ma Max
 T/R Range: ~ 20mm
 Coils: 1-9/16" O/D X 1-3/16" I/D X 3/32" thick

Rec: L: 15/16" W: 3/8" HT: 1/8" WT: .01

Trans: L: 5/8" W: 7/16" HT: 1/8" WT: .01

STOCK #	DESC.	1EA
32187-PS	Wireless Charger Pair	\$12.05

CHASSIS MOUNT TRANSFORMERS

Selecting Transformers

Volts & Current listed are nominal RMS.
Open circuit and loaded values are different.
Type of rectifier/filter circuit will effect secondary & output current and they can be very different.

Full wave center tap choke input filter:
Transformer secondary amps are .7 X required output amps.

Full wave center tap cap input filter:
Transformer secondary amps are 1.2 X required output amps.

For Full wave bridge choke input filter:
Transformer secondary amps are = to required output amps

For Full wave bridge cap input filter:
Transformer secondary amps are 1.8 X required output amps.

A



B



STOCK #	STYLE	INPUT	OUTPUT VOLTS	AMPS	LEADS	DIMN. (L W H)	WT.	1EA
27838-TR	A	110/220VAC	12VAC (6V-0V-6V)	1A	6"	2-3/4" x 1-1/2" x 1-5/8"	.6	\$5.75
27839-TR	A	110/220VAC	12VAC (6V-0V-6V)	2A	6"	3-1/4" x 2" x 2"	1.3	\$7.95
27840-TR	A	110/220VAC	12VAC (6V-0V-6V)	4A	6"	4" x 2" x 2-1/4"	1.7	\$13.95
27841-TR	A	110/220VAC	18VAC (9V-0V-9V)	1A	6"	3" x 2" x 1-3/4"	.8	\$5.95
27842-TR	A	110/220VAC	18VAC (9V-0V-9V)	1.5A	6"	3-1/4" x 2" x 1-7/8"	1.1	\$6.95
27843-TR	A	110/220VAC	18VAC (9V-0V-9V)	2A	6"	3-1/4" x 2" x 1-7/8"	1.1	\$7.95
27844-TR	A	110/220VAC	24VAC (12V-0V-12V)	2A	6"	3-1/2" x 2-1/4" x 2"	1.4	\$9.95
27845-TR	A	110/220VAC	24VAC (12V-0V-12V)	4A	6"	3-7/8" x 2-1/2" x 2-1/4"	2.3	\$16.95
27846-TR	B	110/220VAC	24VAC (12V-0V-12V)	10A	6"	3-3/4" x 3-5/8" x 3-3/8"	5.5	\$35.95

The Transformers above have a Center tapped secondary allowing use of Half wave, Full wave center tap or Full wave bridge rectifier circuits.

12VAC/3A PLUG-IN TRANSFORMER

MFG: MG/MGT1249

Volts: 12VAC

AMPS: 3A

Termination: 2 Pos. Screw

Specifications/Features: 12VAC @ 40VA

plug transformer with LED Indicator for use with security cameras, panels etc. Std polarized 3 prong input, screw terminals for output. White plastic case with screw for mounting to wall outlet. UL/canada/usa listed

L: 4" W: 2-5/8" H: 2-1/4" WT: 1.6

STOCK #	DESC.	1EA	12+EA
31004-PA	12VAC/3A Plug-In Trans.	\$8.95	\$8.45

24VAC/1.6A PLUG-IN TRANSFORMER

MFG: MG/MGT1249

Volts: 12VAC

AMPS: 3A

Termination: 2 Pos. Screw

Specifications/Features: 24VAC @ 40VA

plug transformer with LED Indicator for use with security cameras, panels etc. Std non-polarized 2 prong input, screw terminals for output. White plastic case with screw for mounting to wall outlet. UL/usa/can Class 2 & 3

L: 4" W: 2-5/8" H: 2-1/4" WT: 1.7

STOCK #	DESC.	1EA	12+EA
31005-PA	24VAC/1.6A Plug-In Trans.	\$9.25	\$8.45

26.5VAC TRANSFORMER

MFG: STRANDEX/CIN-TRAN

P/N: 30-BD-2434

Input: 120VAC/60Hz

Output: 26.5V 40VA

Specifications/Features: Enclosed transformer for Class 2 use. 1/2" EMT male fitting/nut for Box mount. 6" AC input leads, 8" Output leads. UL/canada/us listed.

L: 3-1/4" W: 1-13/16" H: 12-1/4" WT: 1.5

STOCK #	DESC.	1EA
32196-TR	26.5VAC Transformer, Cal-Tran	\$7.95

50VA CONTROL TRANSFORMER

MFG: EGS (SOLA)

P/N: E050TH

Input: 220/230/240/380/400/
415/440/460/480 VAC 50/60Hz

Output: 110/115/120/220/230/240AC

V/A: 50 continuous @ 40C ambient/110 VA instantaneous.

Specifications/Features: Quality, Open frame universal industrial Control Transformer. Class 105 insulation. Dual primaries and dual secondaries. Heavy duty terminal strips. UL/canada/us/CE listed. RoHS compliant

L: 4-3/8" W: 3-3/8" H: 2-7/8" WT: 4.2

STOCK #	DESC.	1EA
31833-TR	EGS 50VA Transformer	\$39.95

.5KVA ADJUSTABLE AUTOTRANSFORMER

Input: 110 VAC 50/60Hz

Output: 0-130V@ 500VA (4A)

Specifications/Features: Enclosed,

non-isolated, Adjustable transformer

Features: Analog Output Volt Meter,

lighted Switch, fuse & single 3 blade

outlet.

H: 6" W: 4-3/4" D: 6-1/2" WT: 10

STOCK #	DESC.	1EA	6+EA
15162-TR	.5KVA Adj. Transformer	\$49.95	\$43.80

2KVA ADJUSTABLE AUTOTRANSFORMER

Input: 110 VAC 50/60Hz

Output: 0-130V@ 2KVA (15A)

Specifications/Features: Enclosed,

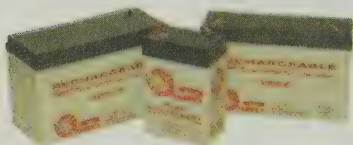
non-isolated, Adjustable transformer

Features: Analog Output Volt Meter, lighted Switch,

20A fuse & a duplex 3 blade outlet.

H: 7-1/2" W: 8-3/4" D: 6-7/8" WT: 22

STOCK #	DESC.	1EA	6+EA
15163-TR	2KVA Adj. Transformer	\$104.95	\$93.59

RECHARGABLE
BATTERIES

Sealed Lead/Acid gell cells with .187 Quick connect terminals. For general purpose use in UPS systems, Alarms, Portable lighting. 20hr capacity rating.

17280: L: 2.8"	W: 1.9"	H: 4.2"
14817: L: 6"	W: 1.4"	H: 3.9"
14819: L: 6"	W: 2.6"	H: 3.9"

STOCK #	DESC	WT	1EA	25 EA
17280-BT	6V@4A (NP4-6)	2	\$7.95	\$7.45
14817-BT	6V@8A (NP8-6)	4.5	\$18.95	\$17.95
14819-BT	12V@7A (NP7-12)	6	\$20.95	\$19.95

4.8V RECHARGABLE
BATTERY

Shrink-wrapped Ni-Mh "AA" cell pac. Rated: 4.8VDC @ 1500mAh. Charge: 150mA for 16Hr. standard or 1500mA for 1.2Hr. Rapid using appropriate charger. 6in. leads

L: 2-1/4"	H: 2-1/8"	D: 9/16"	WT: .25
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STOCK #	DESC	1EA
32262-BT	4.8V@1500mAh Ni-Mh Pack	\$1.95

RFI INLET FILTER

DELTA 10ME3, PC board/Panel mount, power inlet/RFI Filter. Rated: 10A @ 115/250VAC. Standard male 3 blade IEC cord connector. Right angle solder output terminals. UL/CSA /VDElisted.

W: 2"	H: 1-1/32" Body	D: 1-5/8"	WT: .1
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STOCK #	DESC	1EA
18456-FL	6A Delta RFI Module	\$1.95

POWER ENTRY
EMI FILTER

BIT P/N ID-10AC-S, Screw mount power inlet noise filter. Rated: 10A @ 250VAC. Standard male 3 blade IEC C-14 cord connector, Solder terminals. UL/CSA/TUV/VDE/CE listed.

W: 2"	H: 1-15/16"	D: 1"	WT: .1
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STOCK #	DESC	1EA
31918-FL	Power Entry EMI Filter	\$0.75

FLAT CABLE
NOISE FILTERS

Fair-Rite Snap-On, ferrite filters. Clamps on ribbon cable up to 1" wide & up to .05" thick (20 conductor). Type 43 material blocks noise frequencies from 1MHz to 100MHz. Permeability=1000, impedance: 77 @ 25MHz 225 @ 100MHz. Peel-n-stick mounting tape on back

L: .9"	W: 1.5"	H: .375"	WT: .05
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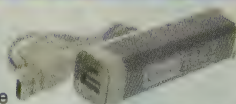
STOCK #	DESC	1EA	25 EA
15456-FL	20 Cond. Noise Filter	\$2.25	\$1.89

SNAP-ON
NOISE FILTERS

Fair-Rite P/N 0443167281 ferrite snap-on filters. Plastic case with type 44 split core material. Clamps around cable up to .4in Dia. and blocks noise. Frequencies from 30MHz to 500MHz. Permeability=500, impedance: 125 @ 25MHz /210 @ 100MHz

L: 1.55"	W: .94"	H: .94"	WT: .08
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STOCK #	DESC	1EA	25 EA
17842-FL	.4" Clam Noise Filter	\$2.40	\$1.95

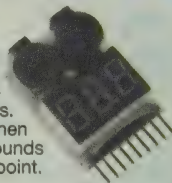
LI-ION BATTERY
PACK

Compact, on the go rechargeable Li-On battery pack. Fits in your pocket and can recharge your phone, player, readers anything that can be charged from USB port. Charger Stick is then recharged from any computer, laptop, or phone charger with USB port. 2600mAh capacity for multiple recharges.

USB Type A female Output port, Micro B Input port for charging, Includes a 24in. USB A male to USB Micro B male cable.

SQ 1"	L: 3-5/8"	WT: .3
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STOCK #	DESC	1EA
31910-BT	Li-Ion Battery Pack	\$9.95

LIPO BATTERY
CHECKER

Mini Tester for R/C batteries. Designed to test 1-8 Cell LiPo, Li-Ion, LiMn & LiFe Packs. Scans each cell & displays the voltage then displays total Voltage of Pack. Alarm sounds when a cell is below programmable set point. Character Height: 0.36in.

Input Range : .5-36Vmax
Input cell Range: .5-4.5V
Cell Alarm Set point: 2.7-3.8V
Resolution: .01V

9 Pin header (.025" sq X .1" spacing), - and 1 for each cell in pack up to 8

L: 1-1/2" O/A	W: 1"	T: 1/2"	WT: .02
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STOCK #	DESC	1EA
31067-TE	LiPo Battery Monitor	\$4.95

AC POWER OUTLET

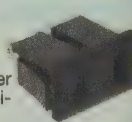


NEMA 5-15R Snap-in, Chassis mount, Black thermoplastic three wire polarized primary power connector. Rated for 70deg. "C". .200" quick connect terminals. UL listed 15A@250V. Hole Cutout: .95in X .877in.

W: 1-1/16"	H: 1-1/16"	D: 1-13/32"	WT: .018
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STOCK #	DESC	1EA
32041-PL	NEMA 5-15 AC Power Outlet	\$0.75

AC POWER OUTLET



NEMA 1-15R Snap-in, Chassis mount, Black thermoplastic two wire polarized primary power connector. Rated for 70deg. "C". Solder terminals. UL/CSA listed 15A @ 125V. Hole Cutout: .875in X .468in.

W: 1-1/32"	H: 5/8"	D: 1-5/32"	WT: .01
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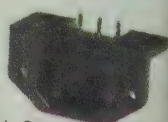
STOCK #	DESC	1EA
32040-PL	NEMA 5-15 AC Power Outlet	\$0.49

HI-TEMP
IEC CONNECTOR

Snap-in, Chassis mount, Black thermoplastic, 120/220 VAC @ 10A, IEC 60320/C-16 three wire primary power connector for High Temperature appliances. Rated for "HOT" use @ 120deg. "C". .250" quick connect terminals. UL/CSA listed 15A@250V/VDE/TUV listed 10A@250V

W: 1-3/16"	H: 7/8"	D: 1-1/8"	WT: .016
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STOCK #	DESC	1EA
17371-PL	High Temp. IEC Inlet	\$0.49

IEC POWER
INLET

IEC 60320 type C-14 Right Angle P.C. mount, power inlet. Rated: 15A @ 250VAC UL/CSA. Standard IEC equipment end male 3 blade cord connector. Solder terminals.

W: 2"	H: 1-1/16"	D: 1-1/16"	WT: .04
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STOCK #	DESC	1EA
18022-PL	IEC P.C. Mount Power Inlet	\$0.79

SOLDERING STATION

General purpose solder station for the hobbyist. Adjustable from 5 to 50 Watt (800° F max) heat output for repairing PC boards to soldering transformer terminals. Station provides on-off switch, knob to control wattage, built-in stand, tip cleaning sponge & 1/32" point tip. 115 VAC line.



Base L: 5-5/8" W: 4-9/16" T: 3-5/8" WT: 1.8

STOCK #	DESC.	1EA	10+EA
15860-TL	Solder Station	\$14.95	\$13.95
15861-TL	Replacement handle	\$4.95	\$4.49

REPLACEMENT TIPS

Tips for 15860-TL ONLY soldering station. Different styles for various uses. WT: .05

STOCK #	DESC.	1EA	10+EA
15862-TL	1/32" Point Tip	\$1.95	\$1.75
15863-TL	1/16" Point Tip	\$1.95	\$1.75
15864-TL	1/8" Flat Tip	\$1.95	\$1.75
15865-TL	1/8" Chisel Tip	\$1.95	\$1.75

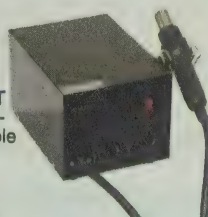
HOT AIR REWORK STATION

Hot air repair/rework station for SMT devices. Features: a fast heating ceramic heater, internal air supply, stable temperature, comfort grip handle, interchangeable hot air nozzles for PLCC/SOP/ etc. devices. Adjustable air flow and temperature. Temperature range: 150 deg.-500deg. "C". Station Includes 4 nozzles:

- 16123-TL QFP 10 X 10 (mm),
- 16124-TL QFP 14 X 14 (mm),
- 16122-TL Single 2.5mm Dia.,
- 16128-TL Single 4mm Dia.

Repair Parts & Other Nozzles Available

WT: 9



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STOCK #	DESC.	1EA
16121-TL	SMD Rework Station	\$99.95

REPLACEMENT REWORK STATION PARTS

See www.mpja.com for pictures of replacement parts for 16121-TL

STOCK #	DESC.	1EA
17215-TL	Replacement Heater	\$4.95
17216-TL	Replacement Wide Pickup Wire	\$1.49
17217-TL	Replacement Narrow Pickup	\$1.49
17218-TL	Replacement Pickup Handle	\$1.49

HOT AIR STATION NOZZLES

VISIT mpja.com for listing and pictures of QFP/SOP Nozzles for 16121-TL Rework Station.

Different styles for various uses.



WT: .2

STOCK #	DESC.	1EA
16122-TL	2.5mm Dia. Nozzle	\$4.95
16123-TL	10mm sq. QFP Nozzle	\$6.95
16124-TL	15mm sq. QFP Nozzle	\$6.95
16125-TL	19mm sq. QFP Nozzle	\$6.95
16126-TL	15mm X 21mm QFP Nozzle	\$6.95
16127-TL	29mm sq. QFP Nozzle	\$7.95
16128-TL	4.4mm Dia. Nozzle	\$4.95
16129-TL	4.8 X 10mm SOP Nozzle	\$6.95
16130-TL	5.7 X 15mm SOP Nozzle	\$6.95
16131-TL	7.2 X 16mm SOP Nozzle	\$6.95
16132-TL	7.2 X 19mm SOP Nozzle	\$6.95

TEMPERATURE CONTROLLED SOLDER STATION

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ZD Electronic Tools ZD-929C

Temperature controlled soldering station with LED display. Heat sensor located near the tip for fast response and +/-10° "F" control. Rated at 48Watts, 24Vac handle. Temperature range: 320° "F" to 800° "F". Isolated tip, fused line, 117 VAC. Extra tips are available for general replacement or special uses.

Base L: 6-3/4" W: 4-3/4" T: 3-9/16" WT: 4.8

STOCK #	DESC.	1EA	5+EA
15845-TL	LED Solder Station	\$46.95	\$39.95
15846-TL	Replacement Handle	\$6.95	\$6.49

REPLACEMENT TIPS

Tips for 15845-TL ONLY temperature controlled soldering station. Different styles for various uses. WT: .05

STOCK #	DESC.	1EA	10+EA
15851-TL	.12" Conical Tip/std. Shank	\$1.95	\$1.75
15852-TL	.08" Chisel Tip/std. Shank	\$1.95	\$1.75
15853-TL	.02" Round Tip/med. Shank	\$1.95	\$1.75
15854-TL	.06" Blunt Tip/thin Shank	\$1.95	\$1.75

SMD HOT TWEezer ADAPTER

48W, Hot tweezer adapter replaces the soldering iron handle/heater assembly on our 15845-TL station. Removes surface mounted components up to 2.5mm with tip supplied. Other size tips are available.



WT: .5

STOCK #	DESC.	1EA	5+EA
15847-TL	Hot Tweezers Adapter	\$12.95	\$11.49

SMD TWEezer TIP SET

Set of 7 different size tips for SMD tweezer handle 15847-TL. One pair of 2.5mm, 3.5mm, 5mm, 10mm, 15mm, 20mm and 30mm wide tips.



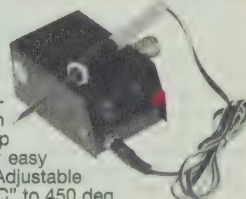
WT: .1

STOCK #	DESC.	1EA	5+EA
15848-TL	Hot Tweezer Tip Set	\$5.95	\$5.49

MINI SOLDER STATION

8W mini temperature controlled soldering station with un-grounded tip and comfort grip handle. Easy off connector for easy replacement of handle/heater. Adjustable Temperature range: 100 deg. "C" to 450 deg. "C" (212-842 "F"). Fused line, 117 VAC.

L: 4" W: 3" O/A H: 1-7/8" WT: 1.5



STOCK #	DESC.	1EA	10+EA
16924-TL	8W Mini Station	\$12.95	\$11.95

30W SOLDERING IRON

Light weight, 30 watt pencil iron with pointed tip. Includes simple stand & Spare Tip. 4ft, 3 wire line cord. Tip is grounded. Overall length of iron is 9". Ideal for general shop use. CE listed

L: 8-1/4" WT: .45



STOCK #	DESC.	1EA
17518-TL	30W Solder Iron/Stand	\$5.95

RAPID HEATING SOLDER STATION

ZD Electronic Tools ZD-8936

Soldering station with holder & cleaning sponge.

Features: Rapid Heat-up

Selectable C/F Display.

Temperature controlled output up to 48Watts,

Temperature range: ~160 "C" to 480 "C"

117 VAC. non-fused line.

Grounded Tip

CE Listed

Extra tips are available for general replacement or special uses.

Base:W: 2-5/8" H: 2-1/2" D: 4-1/2" WT:1.4

STOCK #	DESC.	TEA
32580-TL	Rapid Heat Solder Station	\$59.95
32581-TL	Replacement Handle	\$14.95
19521-TL	~1mm Fine Point Replacement Tip	\$1.95
19522-TL	~2mm Conical Point Replacement Tip	\$1.95
19523-TL	~3mm Conical Point Replacement Tip	\$1.95

HOBBYIST SOLDER STATION

ZD Electronic Tools ZD-932

Soldering station with holder

& cleaning sponge. TRIAC

controlled output up to 48Watts,

Temperature range: 250 "C" to 480

"C". 117 VAC. non-fused line. NON-Isolated tip,

Extra tips are available for general replacement or special uses.

W: 5-1/2" H: 4-3/4" (Base) D: 6-1/2" WT: 2

STOCK #	DESC.	TEA	10+EA
19154-TL	Hobbyist Solder Station	\$15.95	\$14.95

REPLACEMENT TIPS

Tips for 19154-TL ONLY soldering station. Different styles for various uses. WT: .05

STOCK #	DESC.	TEA	10+EA
15851-TL	.12" Conical Tip/std. Shank	\$1.95	\$1.75
15852-TL	.08" Chisel Tip/std. Shank	\$1.95	\$1.75
15853-TL	.03" Round Tip/med. Shank	\$1.95	\$1.75
15854-TL	.06" Blunt Tip/thin Shank	\$1.95	\$1.75

MINI HOBBYIST SOLDER STATION

Mini Soldering station with

holder. Small fine tip for soldering

SMDs as well as light craft uses.

Front panel temperature control .

Output up to 8Watts.

Temperature range: ~100 "C" to 450 "C".

117 VAC. non-fused with polarized line cord.

NON-Grounded tip.

Base:W: 2-5/8" H: 2-1/2" D: 4-1/2" WT:1.4

STOCK #	DESC.	TEA
32586-TL	Mini Hobbyist Solder Station	\$14.95
32587-TL	Replacement Handle	\$4.95
32588-TL	Replacement Tip	\$1.95

SOLDERING KIT

Handy tool set for field or

general use. Set includes:

30 Watt Soldering Iron and a spare

tip for Iron, Metal stand, Aluminum

Desoldering sucker and extra Teflon tip,

plastic tube of rosen core solder.

CE listed.

WT: .6

STOCK #	DESC.	TEA	10+EA
16431-TL	Soldering Tool Set	\$7.95	

REPAIR STATION

Technician work

station with Sol-

dering station, Digital

Meter & Adjustable Pow-

er Supply. CE listed

Includes: Meter Probes, Power supply clip leads, Soldering Iron stand.

Features:

Power Supply: 1.2-12VDC adjustable @ 1Amp

Digital Multimeter: Backlit 3-1/2" digit LCD display. 9V battery power, Accuracy:2% worst case (10A range)

DC V & CURRENT

Volts: .2,2,20,200,500V

Current:200ua,2,20,200mA,(10A max 10 seconds)

AC VOLTS

Volts: 200,500V

RESISTANCE

Ohms: 200-2K-20K-200K-2M-200M

Test V: <2.8 VDC

MISCELLANEOUS

Diode Test, 1.5, 9 & 12V Battery test

Accuracy:2% worst case (10A range)

Solder station: 40W Temperature controlled soldering station

with: grounded tip, ceramic heater and comfort grip handle.

Processor controlled closed loop temperature control. LCD

display shows Set & Actual temperature in F or C. Easy off

connector for easy replacement of handle/heater. Push the

knob once to turn the solder station "ON", push the knob again

to switch between degrees "C" and "F". Push and hold for 3

seconds to turn the unit "OFF". Adjustable Temperature range:

160 deg. "C" to 400 deg. "C" (320-750 "F").

POWER: 100-240VAC / Fused @ 1A

WT: 7

STOCK #	DESC.	TEA
28901-TL	Tech. Test Station	\$125.95

ADJUSTABLE SOLDERING IRON

Clear handle, Light weight, adjustable 50 watt pencil iron with a pointed tip. Temp. Range: 200-450 "C". Red LED indicates heater operation. 4ft, 3 wire line cord. Tip is grounded. Overall length of iron is 9". Ideal for general shop use. CE listed.

L: 9-5/8"

WT: .5

STOCK #	DESC.	TEA
17517-TL	Adj. 50W Solder Iron	\$12.95
17530-TL	Replacement TIP	\$1.95

LIGHTED SOLDERING IRON

Light weight, 30 watt pencil iron with a

pointed tip and a White LED that illuminates

the tip. 4ft, 3 wire line cord. Tip is grounded. Overall length of

iron is 9". Ideal for general shop use. CE listed.

L: 9

WT: .4

STOCK #	DESC.	TEA
17516-TL	Lighted Solder Iron	\$5.95
17531-TL	Replacement TIP	\$1.75

DESOLDERING IRON

Light weight, 40 watt desoldering iron. Built in solder sucker, 4ft, 3 wire line cord. Overall length of iron is 10-1/2". Ideal for general shop use. 115VAC/40W

L: 10-1/2"

WT: .6

STOCK #	DESC.	TEA	10+EA
16922-TL	Desoldering Iron	\$6.95	\$5.95
16923-TL	Replacement Tip	\$1.95	\$1.75

SOLDERING KIT

Light weight 5 pc. set. Includes: 30 watt pencil iron with pointed Tip, Solder Sucker, Simple stand, 10gm of No Lead Solder (SN99.3/Cu0.7), 1.5m of Solder Wick. Ideal for general shop use. UL/canada/us listed.

L: 8-1/4" (Iron)		WT: .6
STOCK #	DESC.	1EA
32234-TL	30W Soldering Iron Set	\$14.95

ADJUSTABLE ARM SMOKE ABSORBER

Smoke absorber with activated carbon filter removes fumes and smoke from work area. 2 section cantilevered metal arms with 3 joints allows for multi-positions. ESD safe plastic with metal stand. 115VAC fan with 5ft. cord. Includes 2 spare filters (filters should be changed after 30 days of use), 2 fan exhaust deflectors. +- 85deg. Arm swing.

H: adj 0-16" from Benchtop WT: 6

STOCK #	DESC.	1EA
17529-TL	Smoke Absorber	\$39.95
15167-TL	Replacement Carbon Filters	\$6.50

BENCHTOP SMOKE ABSORBER

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Benchtop smoke absorber with activated carbon filter removes fumes and smoke from work area. ESD safe plastic with metal stand. 115VAC fan with 5ft. cord. Includes 2 filters. (filters should be changed after 30 days of use).

H: 10" W: 7-3/4" D: 4-1/4" WT: 3.1

STOCK #	DESC.	1EA
15166-TL	Smoke Absorber	\$27.99
15167-TL	Replacement Carbon Filters	\$6.50

SOLDER BRAID

MG Chemicals "SuperWick" is made from oxygen free copper & pure RMA rosin. When placed on a solder connection and heated; Superwick will draw up the melted solder. 5ft on a plastic spool. Ideal for PC board repair, field service, etc.

L: 5ft/ 25ft. WT: .2/1

STOCK #	DESC.	1EA
30369-MG	#424 5ft X .05in. Superwick	\$2.85
30370-MG	#425 5ft X .075in. Superwick	\$2.95
30371-MG	#426 5ft X .10in. Superwick	\$1.15
30372-MG	#442 25ft X .05in. Superwick	\$10.95

SOLDER BRAID

When placed on a solder connection and heated; this rosin coated copper braid will draw up the melted solder. 1.5m (4.9ft) on a plastic spool. Ideal for PC board repair, field service, etc.

L: 1.5m WT: .2

STOCK #	DESC.	1EA	5+EA
22648-TL	2mm Wide Solder Wick	\$0.65	\$0.59
19165-TL	3mm Wide Solder Wick	\$0.75	\$0.69

60/40 SOLDER

1/2lb. spool of .08mm (.032") dia., Rosin Core Tin/Lead solder. Half pound spool for bench top or tool box. For all electronic uses.

WT: .52

STOCK #	DESC.	1EA
19266-TL	60/40 0.08mm Wire Solder	\$12.95

TIN/LEAD SOLDER

.22lb. (100g) spool of 1mm (.040") dia., Rosin Core Tin/Lead solder. 100gr spool for bench top or tool box. For all electronic uses.

WT: .25

STOCK #	DESC.	1EA
32330-TL	60/40 1mm Wire Solder	\$7.95

NO LEAD SOLDER

Handy 10gm (Approx 6ft.) Pull-tube of 99.3Sn/0.7Cu alloy solder. For applications requiring a NO-LEAD Solder Liquidus: 227-230 deg. "C" 1mm/.039" Dia. ~18AWG Mildly Activated core

WT: .06

STOCK #	DESC.	1EA
32056-TL	Sn/Cu Lead Free Solder	\$2.99

63/37 SOLDER

Handy 10gm (Approx 4.7ft.) Pull-tube of 63Sn/37Pb alloy solder. For general electronic applications Liquidus: 183-190 deg. "C" 1mm/.039" Dia. ~18AWG Mildly Activated core

WT: .06

STOCK #	DESC.	1EA
32775-TL	63Sn/37Pb Leaded Solder	\$1.99

ANTISTATIC SOLDER SUCKER

Antistatic solder removal tool with plastic body and teflon tip. Spring loaded tool with push button release, uses suction to remove solder from circuit board components.

L: 13-1/2" D: 1-1/4" WT: .25

STOCK #	DESC.	1EA	50+EA
17220-TL	Solder Sucker	\$5.95	\$4.95
17221-TL	Replacement Tip	\$1.95	\$1.49

ANTISTATIC TIP SOLDER SUCKER

Solder removal tool with Plastic body and Antistatic tip. Spring loaded tool with push button release.

L: 11-1/4" D: 15/16" WT: .2

STOCK #	DESC.	1EA	5+EA
15859-TL	Solder Sucker	\$6.95	\$6.49
15858-TL	Replacement Tip	\$2.35	\$1.95

MINI SOLDER SUCKER

Plastic tip and aluminum body. Spring loaded with push button release, with replaceable tip.

L: 7-7/8" D: 7/8" WT: .2

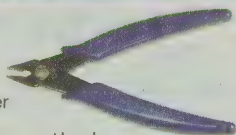
STOCK #	DESC.	1EA	5+EA
20041-TL	Mini Solder Sucker	\$3.95	\$2.95
29178-TL	Mini Replacement Tip	\$0.69	\$0.59

FLUSH CUTTERS

Spring loaded Flush Cutters
Feature: Hardened to HRC 58.
cushion grip handles, cut copper
wire up to 1mm
Used for trimming PC Board component leads.

L: 5"

WT: .18



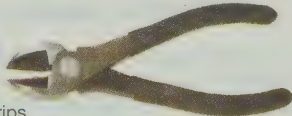
STOCK #	DESC.	1EA
18334-TL	5in. Flush Cutter	\$2.95

HEAVY DUTY
SIDE CUTTERS

Cushioned dipped vinyl grips
General purpose electrical/craft use

L: 7-1/4"

WT: .6



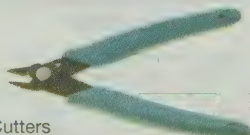
STOCK #	DESC.	1EA
17915-TL	6" H/D Diagonal Cutter	\$2.95

FLUSH CUTTERS

Spring loaded tool steel Flush Cutters
with cushion grip handles. Cut copper wire up to 1mm
Used for trimming PC Board component leads.

L: 5"

WT: .12



STOCK #	DESC.	1EA
32824-TL	5in. Flush Cutter	\$2.49

6" DIAGONAL
CUTTERS

6-in, Dropped forged
Steel dikes with Cushioned grips. Micro chrome finished.
For copper or Brass.

L: 6-3/8"

WT: .38



STOCK #	DESC.	1EA
31847-TL	6" Diagonal Cutter	\$4.95

GENERAL PURPOSE
CRIMPER

General purpose & automotive strip-
per/crimper with Cushioned
Grips.
Strips solid 18-8AWG & 22-
10AWG stranded wire, Cuts
4-40, 6-8, 10-32 & 10-24 bolts, Cut & strip Wire, Crimps 10-22
AWG Ins. & Non Ins. and 7-8mm Auto Terminals

L: 8-1/4"

WT: .5



STOCK #	DESC.	1EA
19110-TL	General Purpose Tool	\$4.95

WIRE
STRIPPERS

Precision Strippers feature:
Spring Loaded, Cushioned Grips,
Ground Cutting Jaw. Strips 10-22AWG/2.6-0.6mm wire.

L: 6 1/2"

WT: .4



STOCK #	DESC.	1EA
19111-TL	Precision Stripper	\$4.95

HEX CRIMP
TOOL

Heavy Duty HEX Crimp Tool for RG59,
RG6 & RG-62 "F" connectors.
Features: Cushioned Grips, Dual Cavity: .255"
& .322"

L: 9"

WT: 1.5



STOCK #	DESC.	1EA
19209-TL	RG-6, 62 HEX Crimp Tool	\$9.95

DUAL RANGE
HEAT GUN

Heat Gun with two heat ranges:
800 Watt or 1500 Watt, With control
knob to vary the temperature.
Low range 50-200° C, high range
200-500° C. 5ft. 3 wire power cord. 115VAC power.
Includes concentrator nozzle attachment. Ideal for
heatshrink tubing, paint stripping, plastic fabrication.

L: 10-1/4" W: 2-7/8" H: 8-1/4" WT: 2



STOCK #	DESC.	1EA	10+EA
15857-TL	Dual Range Heat Gun	\$18.95	\$17.95

8 PC. PLIER SET

Handy set Drop forged steel
pliers with spring return &
cushion grip handles.
Includes: Diagonal cutter,
Serialized needle nose
Smooth jaw bent nose
Smooth jaw Flat nose
Smooth jaw long needle nose
Serialized Linesman pliers
with cutter



Smooth jaw round nose
End nippers.
Zippered pouch

L: 4" to 5-1/2" O/A

WT: 1.4

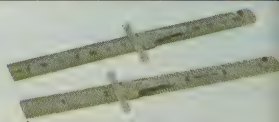
STOCK #	DESC.	1EA
32372-TL	8pc. Plier Set with Case	\$14.95

INCH & METRIC
RULES

Pair of Stainless rulers with
pocket clips in a hanging pouch.
Metric: 0-150mm in .5mm graduations
Inch: 0-6" in 1/32" graduations.

L: -6-3/8"

WT: .04



STOCK #	DESC.	1EA
33163-TL	Metric & Inch Steel Rulers	\$1.95

"F" CONNECTOR COM-
PRESSION TOOL

Hand tool for compression type waterproof
"F" connectors. Features: 13mm compres-
sion distance, Cushioned Grips, palm squeeze
Action, single cavity, for RG-59 & RG-6 coaxial cable

L: 5"

WT: .62



STOCK #	DESC.	1EA
19225-TL	Squeeze Compression Tool	\$12.95

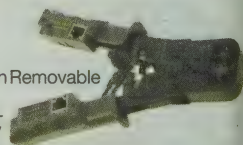
RJ CRIMPER
& CABLE TESTER

Heavy Duty RJ Plug Crimp Tool with Removable
LAN Test modules in handle.
Features: Cushioned Grips, Rat-
chet Action, 3 Cavity Crimp, Cutter/
Stripper for UTP & STP (SFTP)
Cable.

Crimps RJ-11/12 & 45 Plugs (4,6,8 Pin)
Tests: Opens, Shorts and Crossed wiring
Modes: Single and Cycle (run through 6 times)
Includes Soft Woven Belt Pouch
Power: 3pcs. LR-44 Button cells (Included)

L: 7-3/4"

WT: 1.3



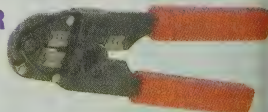
STOCK #	DESC.	1EA
32307-TL	RJ Plug Crimper & LAN Tester	\$29.95

MOD CONNECTOR
CRIMP TOOL

Heavy duty, modular crimp tool for attaching
CAT-5/5e RJ-45 (8X8) MOD plugs to flat cable. Also cuts and
strips cable. Metal construction with cushioned handles.

L: 7-1/2"

WT: .6



STOCK #	DESC.	1EA
19115-TL	Mod Crimp Tool for RJ-45 Plugs	\$7.95



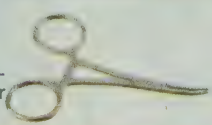
6" STAINLESS DIGITAL CALIPER

Digital caliper features selctable Inch or mm range. Hardened stainless steel with plastic cased electronics. For ID or OD measurements. "Zero" button for resetting or setting offsets. 6in/150mm Max. .0005"/.01mm accuracy/min. reading. Requires a 357A Button cell (Supplied). Stores in foam lined plastic case.

L: 9-1/4"	WT: .7	
STOCK #	DESC.	1EA
17471-TL	6" S/S Digital Calipers	\$12.05

HEMOSTATS

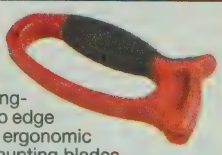
Stainless steel multi-purpose hemo-stats. Serrated tip, clip lock, ideal for holding small components.



			WT: .04
STOCK #	DESC.	1EA	3-EA
23858-TL	3.5" Curved Hemostat	\$2.00	\$1.69

KNIFE SHARPENER

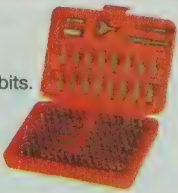
LANSKY, deluxe sharpener uses tungsten carbide heads to obtain a sharp edge in just 3-4 strokes. Plastic body with ergonomic rubber grip. For kitchen, pocket & hunting blades.



		WT: .32
STOCK #	DESC.	1EA
19213-TL	Lansky Sharpener	\$5.95

100 PIECE BIT SET

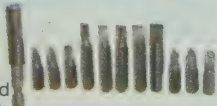
Vast assortment of hard to locate drive bits. Chrome/Vanadium steel bits 1" long
Set includes:
9pc Flat Blade
8pc Phillips
9 pc HEX mm
3pc XZN mm
3pc Torque set
4 pc Tri-wing
3pc Clutch Drive
1/4" Sq to 1/4Hex
1/4" mag. bit holder
5 pc. Security HEX
8 Positive Drive
9pc Star mm
4pc Square
4 pc Spanner
9pc Security Star
1pc Wingnut (5,6,8mm)
1/4" to 1/4Hex Socket
Plastic storage Case
SEE WEB FOR DETAILS



		WT:1.7
STOCK #	DESC.	1EA
18571-TL	100pc. Drive Bit Set	\$9.95

11PC. DRIVE BITS

Magnetic 1/4" Hex drive adapter and 11 bits. Includes the following sizes:
Flat blade: 0.6 X 4.5 0.8 X 5.5 1 X 6.5 1.2 X 6.5 1.6X8mm
Phillips: #1, 2 & 3 Poz: #1,2,3
1/4" X 2-3/8" magnetic bit holder.



Flat: 1-1/2" Phil & Poz: 1"		WT: .44
STOCK #	DESC	1EA
11957-TL	11pc. HEX Drive Bits	\$2.95

10PC. DRIVE BITS

10 Chrome/Vanadium steel bits. Includes the following bits:
2-1/2" Flat blade: 1 ea. 3/16" & 1/4"
#1 Phillips: 1ea 2-1/2" & 4"
#2 Phillips: 1ea 2, 2-1/2", 4" & 4-1/2"
#3 Phillips: 1ea 2-1/2"
Ball Latch Socket adapter
Rubber Bit Holder



		WT: .44
STOCK #	DESC.	1EA
33162-TL	10pc. Drive Bits	\$5.05

CABLE TIE TOOL

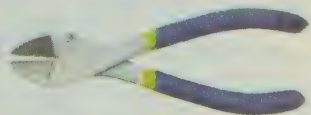
ELECTROFORCE #89605, Tie installation tool tightens & cuts nylon ties in one operation. For ties up to .19in. wide. Adjustment knob selects 8 tension settings.



L: 6-3/4"	H: 5-3/4"	T: 1"	WT: .7
STOCK #	DESC.	1EA	
18353-TL	Cable Tie Install Tool		\$4.95

HARDENED SIDE CUTTERS

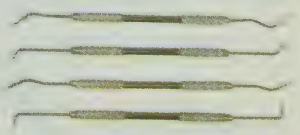
Hardened Heavy duty carbon Steel, Cushioned dipped vinyl grips. Hardened to 55-58 HRC For hard copper, Brass, Light spring & Stainless steel.



L: 7	WT: .52		
STOCK #	DESC	1EA	
18914-TL	Hardened 7in. Cutter		\$4.99

HOBBY PICKS

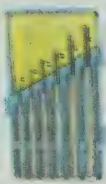
4 piece assortment of double ended steel sharp point, hobby picks. Various shapes with knurled grips.



L: 6-1/2" to 7-1/4"		WT: .19
STOCK #	DESC.	1EA
17917-TL	4Pc. Hobby Steel Picks	\$1.95

MINI SCREWDRIVERS

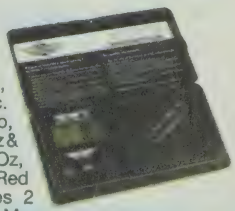
Miniature jeweler screwdriver sets contain 2 Phillips(#0 & #1), 4 flat blade (1,4,2,0,2,4 & 3mm) in a plastic case. Free spinning finger caps. Ideal for glasses, watches, or electronics.



			WT: .3
STOCK	DESC.	1EA	
22039-TL	Mini Screwdriver Set	\$2.49	\$1.98

GEM SCALE

Mini scale for weighing coins, jewelry, Gem stones, Spice etc. Weight modes: Grams, OzAvp, OzTroy, Pennyweight (dwt), 1/8Oz & 1/4Oz. Resolution : 0.1gm, .005Oz, .1dwt. 3 X 2-1/2in. Platform, Red Backlit LCD Display, Requires 2 "AAA" batteries (not Supplied). Max Wt: 10.5oz.



L: 6" O/A	W: 3-1/4" O/A	H: 1/2"	WT: .5
STOCK #	DESC.		1EA
19413-TL	300gm Mini Scale		\$14.95

METAL CUTTING SHEARS

Light duty sheet metal shears features: Spring Loaded handles, serrated high carbon steel blades and ergonomic handles. Cuts 18ga. aluminum, copper etc.



L: 6"		WT: .16
STOCK #	DESC.	1EA
32058-TL	Metal Cutting Shears	\$3.99

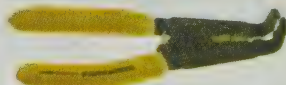
PVC ELECTRICAL TAPE

Adhesive backed PVC tape. Each roll is 3/4in. Wide, 66ft. long & .007in. thick. Rated for: <600V and <80°C use. UL/CSA Listed.

L: 66ft. W: 3/4" WT: .22

STOCK #	DESC.	1EA	10+EA
19555-MI	Black Electrical Tape	\$0.99	\$0.89
19556-MI	Red Electrical Tape	\$0.99	\$0.89
19557-MI	Green Electrical Tape	\$0.99	\$0.89
30112-MI	Gray Electrical Tape	\$0.99	\$0.89
30114-MI	Brown Electrical Tape	\$0.99	\$0.89
30115-MI	White Electrical Tape	\$0.99	\$0.89

NM CUTTER STRIPPER



MADE in USA Klein Tools K90-14/2 Stripper for 14-2 NM electrical cable jacket and conductors. Hardened to cut, strip & loop 14AWG Solid & 18AWG Stranded wire. Patented 90deg. nose for confined space use
Comfort grip handles. Clean cuts 6 & 8-32 screws.

L: 7-3/8" WT: .5

STOCK #	DESC.	1EA
32474-TL	Klein 14/2 NM Cutter/Stripper	\$17.95

RATCHET HANDLE



Adjustable ratchet handle for 1/4" drive bits. Adjusts from straight, 45 & 90deg. 3 position ratchet function: Clockwise lock/Full lock/Counter-clockwise lock.

L: 7" WT: .34

STOCK #	DESC.	1EA
33265-TL	Adjustable Ratchet Handle	\$9.95

GIANT FOLDING LENS



Folding magnifier with a quality 4" Dia. glass lens. 7" tall when open & 1-5/8" folded. 6-1/2" X 5-1/4" open bottom has inch/cm scales. Ideal for collectors, jewelers, electronic repairs.

L: 6-1/2" W: 5-1/4" T: 7" WT: 1

STOCK #	DESC.	1EA
20079-LN	Giant Folding Lens	\$1.95

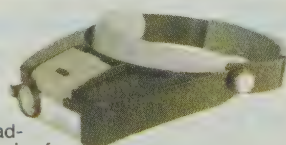
LARGE HELPING HANDS

Round cast iron base with 3-1/2" dia. glass magnifying lens, 2 alligator clips on a cross arm. Move & adjust every which way, leaving your hands free. A must for circuit board, model or jewelry work.

H: 8-1/2" WT: 1.4

STOCK #	DESC.	1EA
16037-TL	Helping Hands & Lens	\$5.95

LIGHTED 3 LEVEL MAGNIFIER



Flip up magnifier with adjustable headband & 3 levels of magnification. 1st. level is 1.5X, 2nd. lens folds down to increase magnification by 1.5X, 3rd. Lens rotates down over Right eye to increase magnification by 7.5X. Dual LEDs provide illumination. Do not interfere with eyeglasses, & flip up out of the way without removing from head. Requires 2"AAA" cells (Not Included)

WT: .5

STOCK #	DESC.	1EA
18336-TL	3 Level Magnifier	\$6.95

ALUMINUM DUCT TAPE

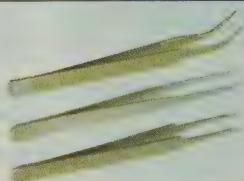


Standard adhesive backed aluminum duct tape. Each roll is 1-7/8in. Wide (48mm), 90ft. long & .002in. thick.

L: 90ft. W: 1-7/8" WT: .7

STOCK #	DESC.	1EA
19558-MI	Aluminum Duct Tape	\$6.95

STAINLESS TWEEZERS



Stainless steel, sharp point, industrial tweezers. Available either standard straight or curved for lower fatigue. Ideal for picking up small components or parts.

WT: .03

STOCK #	FIG.	DESC.	1EA
19543-TL	A	5" Curved Tweezers	\$1.49
19544-TL	B	4-3/4" Straight Tweezers	\$1.49

PHONE LINE CHECKER



Pocket Phone/LAN line tester checks existing wiring for connection to LAN or Phone systems. Test for USOC/568A/B, Phone lines connected to RJ45 jacks, reversed/open wiring, etc.

WT: .1

STOCK #	DESC.	1EA
19130-TE	Pocket Phone Line Checker	\$7.95

ANTI STATIC WRIST STRAP

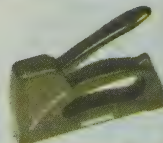


New elastic grounding wrist strap with 1Mohm resistor and 30" collapsed coil cord. Standard banana plug on cord to attach to work station or equipment. Includes a alligator clip that attaches to Banana plug.

L: 30+" WT: .12

STOCK #	DESC.	1EA
30193-TE	Anti-Static Wrist Strap	\$2.95

STAPLE GUN



SHUREBONDER Model 5540 Cable & Wire tacker for Flat wire up to 5/32" wide or round cable up to 1/4" Dia. Requires #15 staples for flat or #14 for round cable.

WT: .82

STOCK #	DESC.	1EA
19126-TL	Surebonder Wire Tacker	\$3.95

STAGING CLAMP



USED Vise type clamp used to hold signs, reflectors, lights and other rigging on pipe or pipe to tooling. Aluminum body with 2" EZ grip knob, steel bolt & platen. Max open clearance: 1-1/2". Max Pipe Dia: 1-1/4". Removable 3" X 2-3/4" 4 hole plate.

L: 4-1/4" O/A W: 3" H: 3" WT: .62

STOCK #	DESC.	1EA
19377-MI	Black Staging Clamp	\$1.99

ADJUSTABLE ANGLE TABLE VISE

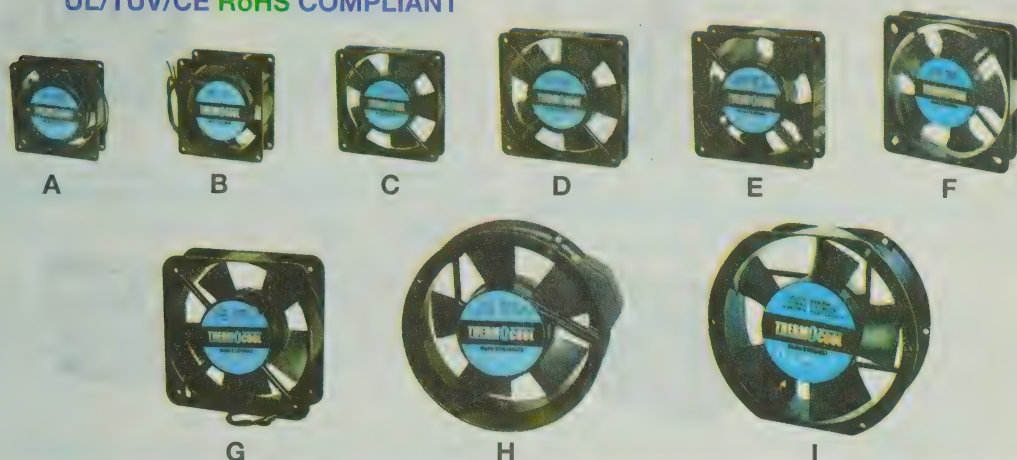


Light/medium duty aluminum table vise has rubber jaw grips & allow +-45° tilt from vertical & 360° swivel. 80mm jaw with swivel ball pivot. Clamps to table/bench up to 2" thick. 2" max jaw opening.

H: 10" O/A W: 5-7/8" WT: 4.2

STOCK #	DESC.	1EA	\$-BA
11240-TL	Adj. Table Vise	\$14.95	\$12.95

THERMOCOOL AC FANS
UL/TUV/CE RoHS COMPLIANT

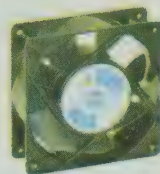


STOCK#	FIG.	P/N	DIMN.	VOLTS/AMP	CFM	NOISE	BEARING	CONNECT	WT	1EA	10-EA
17771-FN	A	G8025HAS	3-1/8 SQ X 1	125AC/.13	23	30	SLV.	WIRE	.6	\$9.95	\$9.95
17772-FN	B	G8038HAS	3-1/8 SQ X 1-1/2	125AC/.14	28	33	SLV.	WIRE	.6	\$14.95	\$12.95
17773-FN	C	G9225HAS	3-5/8 SQ X 1	125AC/.14	34	40	SLV.	TERM	.5	\$9.95	\$8.95
17774-FN	D	G12025HAS	4-11/16 SQ X 1	125AC/.20	66	42	SLV.	TERM	.75	\$9.95	\$8.95
17775-FN	E	G12038HAS	4-11/16 SQ X 1-1/2	125AC/.28	95	48	SLV.	TERM	1.1	\$12.95	\$10.95
17776-FN	E	G12038MAB	4-11/16 SQ X 1-1/2	125AC/.22	85	44	BALL	TERM	1	\$15.95	\$12.95
17777-FN	E	G12038MAS	4-11/16 SQ X 1-1/2	125AC/.22	85	44	SLV.	TERM	1.1	\$11.95	\$8.95
17778-FN	F	G13538HAS	5-5/16 SQ X 1-1/2	125AC/.34	122	53	SLV	WIRE	1.2	\$14.95	\$12.95
17779-FN	G	G15050HAS	6 SQ X 2	125AC/.40	198	58	SLV	WIRE	1.9	\$22.95	\$19.95
17780-FN	H	G17050HASB	6-3/4 RND X 2	125AC/.40	198	59	BALL	TERM	1.8	\$22.95	\$19.95
17781-FN	I	G17050HAST	6-3/4 X 6 X 2	125AC/.40	198	59	BALL	TERM	1.9	\$22.95	\$19.95

6-3/4" AC FAN



4-11/16" 230VAC FAN



MFG: ADDA
P/N: AA1751HB-AT
Voltage: 120VAC
Current: .43A CFM: 210
High Output Ball Bearing fan with metal housing and plastic blades. 53 DB Noise, Solderable Fan Plug input. Ball bearings. UL/canada/us/TUV/CE

MFG: COMAIR/ROTRON
P/N: GAA1238-230BB
Volts: 230VAC
Current: .2A
CFM: 111
Plastic blades with metal housing. 44dB noise. Ball bearings. Solder/Fan Plug. UL/canada/usa/TUV/CE listed.

L: 6-3/4" W: 6" T: 2" WT: 2

SQ: 4-11/16" T: 1-1/2" WT: 1.2

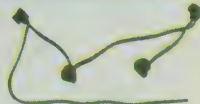
STOCK #	DESC.	1EA
31876-FN	120AC 6-3/4" ADDA Fan	\$22.95

STOCK #	DESC.	1EA
18834-FN	230VAC Comair Fan	\$12.95

24" STRAIGHT FAN CORD



FAN CORD FOR 4 FANS



ZIP Fan cord designed to plug onto most fans with .100in quick connect/solder terminals. Straight molded fan plug on one end.

18/2 ZIP Fan cord designed to plug onto most fans with .100in quick connect/solder terminals. Four 90 Deg. angled molded fan plugs. 1st separated from 2nd. by 3-1/4in. of cord, 2nd. from 3rd. by 6-1/2" of cord and 3rd from last by 3-1/4". 12" of pig tail to 1st. fan.

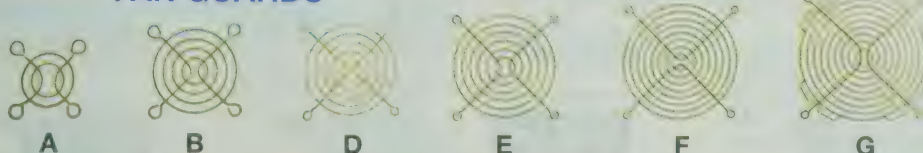
L: 24" WT: .04

L: 27" WT: .08

STOCK #	DESC.	1EA
18833-FN	24" Straight Fan Cord	\$1.49

STOCK #	DESC.	1EA
30347-FN	27" 90 Deg. 4X Fan cord	\$1.95

FAN GUARDS



PICTURES ARE REPRESENTATIVE OF THE STYLE AND MAY NOT BE EXACT

STOCK#	FIG.	FAN SIZE	STYLE	MOUNTING	MAT.	FINISH	WT.	1EA	10-EA
18383-FN	A	1-9/16"/40MM	OFFSET	4 CORNERS	STEEL	CHROME	.01	\$0.99	\$0.89
18384-FN	B	2-3/8"/60MM	OFFSET	4 CORNERS	STEEL	CHROME	.03	\$0.99	\$0.89
18386-FN	D	3-1/8"/80MM	OFFSET	4 CORNERS	STEEL	CHROME	.04	\$1.25	\$0.99
18387-FN	E	3-5/8"/90MM	OFFSET	4 CORNERS	STEEL	CHROME	.05	\$1.25	\$0.99
18388-FN	F	4-11/16"/120MM	OFFSET	4 CORNERS	STEEL	CHROME	.08	\$1.39	\$1.25
17815-FN	G	5"/127MM	OFFSET	4 CORNERS	STEEL	CHROME	.13	\$1.39	\$0.99

5VDC, 1-9/16" X 3/8" NMB BOX FAN

MFG: NMB-MAT
P/N: 1604KL-01W-B50
Volts: 5VDC
Current: 21A
CFM: ~6

Plastic blades & housing, Ball bearings.
29db noise, 37" leads. UL/CSA/VDE/CE listed.

SQ: 1-9/16" T: 3/8" WT: .04

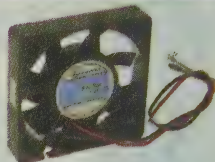


STOCK	DESC	1EA
31854-FN	5VDC 1-9/16" X 3/8" Fan	\$2.95

5VDC, 2" SQ. BOX FAN

REMOVED FROM NEW
TELTEC CPU COOLERS
Dual Lables: 5V/0.18A on one side
and 5VDC/0.2A 1W on other side.
Plastic blades & housing, ball bearings. ~12CFM, 32db noise, 5" leads.

SQ: 50mm (2") T: 11mm (7/16") WT: .06



STOCK	DESC	1EA
32820-FN	5VDC 2 X 1/2" Cooler Fan	\$1.95

5VDC, 1-5/8" X 1/2" ELINA BOX FAN

MFG: ELINA
P/N: HDF4012L-05HB
Voltage: 5VDC
Current: 240mA
CFM: 8

Plastic housing & blades. 28 db
noise, Ball bearing. 11" leads. UL/us/canada listed.

SQ: 1-5/8" T: 1/2" WT: .07



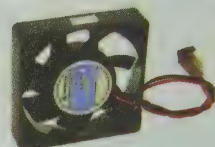
STOCK	DESC	1EA
31414-FN	5VDC 1-5/8" X 1/2" Fan	\$1.95

5VDC, 2" SQ. BI-SONIC BOX FAN

MFG: BI-SONIC
P/N: BS501005M
Volts: 5VDC
Current: .18A
CFM: ~12

REMOVED FROM NEW EQUIPMENT
Plastic blades & housing, ball bearings. 32db noise, 5" leads.

SQ: 50mm (2") T: 11mm (7/16") WT: .06



STOCK	DESC	1EA
32785-FN	5VDC 2 X 1/2" Bi-Sonic Fan	\$2.50

12VDC, 2" X 3/8" T&T BOX FAN

MFG: T&T
P/N: MW-510H12C
Voltage: 12VDC
Current: .14A
CFM: 9

Small box fan with thermoplastic blades & frame. Ball bearings,
10" wire leads. 27 dB noise. UL/CSA/VDE/CE listed.

SQ: 2" T: 3/8" WT: .05



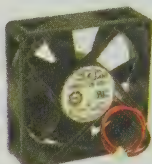
STOCK	DESC	1EA
12773-FN	12VDC 2" X 3/8" Fan	\$1.65

12VDC, 3-1/8" X 1" T&T BOX FAN

MFG: T&T
P/N: 8025L12S ND1
Volts: 12VDC
Current: .14A
CFM: ~30

Plastic blades & housing. 25db noise,
7" leads with 2 socket header connector. UL/canada/us/TUV/CE.

SQ: 3-1/8" T: 1" WT: .18



STOCK	DESC	1EA
30243-FN	12VDC 3-1/8" X 1" Fan	\$1.95

12VDC, 3-1/8" X 1" DELTA BOX FAN

MFG: DELTA
P/N: AFB0812L
Voltage: 12VDC
Current: .12A
CFM: ~27.9

Plastic blades and housing. 25dB
noise. Ball bearings. 5" leads with 4Pin
Molex connector for connecting to computer power supply
IDEX power connector. UL/CSA/VDE/CE listed.

SQ: 3-1/8" T: 1" WT: .2



STOCK	DESC	1EA
18842-FN	12VDC 3-1/8" X 1" Fan	\$4.95

24VDC 4-11/16" SQ. SUNON BOX FAN

MFG: SUNON
P/N: Custom
Volts: 24VDC
Current: .2A
CFM: ~80

Server fan with Plastic blades & housing. <39
db noise, Sleeve bearing. 9" leads. UL/CSA/TUV/CE.

SQ: 4-11/16" T: 1" WT: .35

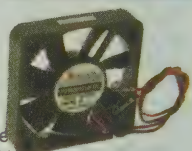


STOCK	DESC	1EA
32921-FN	24VDC 4-11/16" X 1" Sunon Fan	\$5.95

5VDC, 2" SQ. Y S TECH BOX FAN

REMOVED FROM NEW TELTEC
CPU COOLERS
Dual Lables: YSTech 5V/0.85W on one
side and TelTec 5VDC .2A 1W on other
side. Plastic blades & housing, 1ball/1sleeve bearings. ~11CFM,
31db noise, 5" leads. UL/VDE Listed

SQ: 50mm (2") T: 11mm (7/16") WT: .06



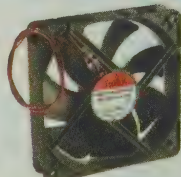
STOCK	DESC	1EA
32821-FN	5VDC 2 X 1/2" Y.S. Tech Cooler Fan	\$1.95

12VDC, 4-11/16" X 1" SUNON BOX FAN

MFG: SUNON
P/N: EEC0251B1-0000-A99
Volts: 12VDC
Current: .451A
CFM: 108

Plastic blades & housing. 44.5 db
noise, Ball bearings. 12" leads. UL/canada/usa/TUV/CE.

SQ: 4-11/16" T: 1" WT: .2



STOCK	DESC	1EA
31203-FN	12VDC 4-11/16" X 1" Fan	\$4.95

12VDC, 4-11/16" X 1-1/2" JAPAN SERVO BOX FAN

MFG: JAPAN SERVO
P/N: CNDC12Z7RP
Input: 12VDC
Current: .71A CFM: 124

Ball bearing fan With plastic body & blades. 49 db Noise, Tach
sensor output. 10 in. leads. UL/ CSA/ TUV Listed.

SQ: 4-3/4" T: 1-1/2" WT: .6



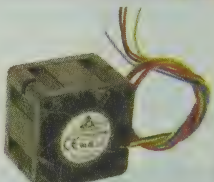
STOCK	DESC	1EA
18222-FN	12VDC 4-11/16" X 1-1/2" Fan	\$4.95

12VDC, 1-1/2" SQ. BOX FAN

MFG: DELTA
P/N: FFB03812HHN
Volts: 12VDC
Current: .57A
CFM: ~17

Speed Sensor output and PWM input for speed control. Plastic
blades & housing. 55db noise. Ball bearing. 12" leads. UL/
CSA/TUV/CE Listed.

SQ: 38mm (1-1/2") T: 28mm (1-1/8") WT: .1



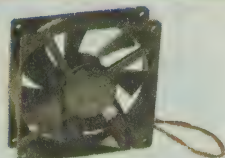
STOCK	DESC	1EA
33157-FN	12VDC 1-1/2" X 1-1/8" Delta Fan	\$4.95

12VDC, 3-5/8" X 1" PANAFL0 BOX FAN

MFG: PANAFL0
P/N: FBA09A12V
Volts: 12VDC
Current: .4A
CFM: 60

Plastic blades & housing. Hydrowave bearings. 11" leads.

SQ: 3-5/8" T: 1" WT: .22



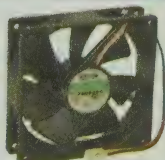
STOCK #	DESC.	TEA
19238-FN	12VDC 3-5/8" X 1" Fan	\$4.95

12VDC, 3-5/8" X 1" AVC BOX FAN

MFG: AVC
P/N: C9025S12H
Voltage: 12VDC
Current: .3A
CFM: 52

Sleeve bearing fan With plastic body & blades. 34db noise. 6" leads, fan stall output. UL/CSA/TUV/CE Listed.

SQ: 3-5/8" T: 1" WT: .16



STOCK #	DESC.	TEA
16543-FN	12VDC 3-5/8" X 1" Fan	\$3.95

12VDC, 2-3/8" SQ. DELTA BOX FAN

MFG: DELTA
P/N: AUB0612LD-S352
Volts: 12VDC
Current: .09A
CFM: ~13

REMOVED FROM NEW EQUIPMENT
Plastic blades & housing, Superflo sleeve bearings. 24db noise, 3" leads. UL/CSA/VDE/CE Listed.

SQ: 60mm (2-3/8") T: 20mm (3/4") WT: .12



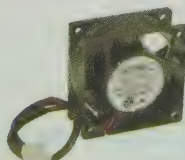
STOCK #	DESC.	TEA
32786-FN	12VDC 2-3/8" X 3/4" Delta Fan	\$2.05

12VDC 2-3/8" SQ. MITSUBISHI FAN

MFG: MITSUBISHI
P/N: MMF-060DL
Volts: 12VDC
Current: .07A
CFM: Unknown

Plastic housing and blades. 8" leads. Ball bearings. UL/CSA listed

SQ: 2-3/8" T: 1" WT: .14



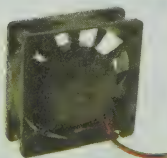
STOCK #	DESC.	TEA
19389-FN	12VDC 2-3/8" X 1" Mitsubishi Fan	\$1.95

12VDC, 2-3/8" X 3/4" PANASONIC FAN

MFG: PANASONIC
P/N: FBM06F12H
Volts: 12VDC
Current: .21A
CFM: ~20

Fan for CPU Cooler with Plastic blades & housing, hydrowave bearings. 32db noise, 1-1/2" leads with 2 pin micro connector.

SQ: 2-3/8" T: 3/4" WT: .1



STOCK #	DESC.	TEA
32713-FN	12VDC 2-3/8" X 3/4" Fan	\$5.95

24VDC, 1-5/8" SQ. SANYO BOX FAN

MFG: SANYO
P/N: 109P0424F301
Volts: 24VDC
Current: .055A
CFM: ~8.6

Speed Sensor output, Plastic blades & housing, Ball bearing. 30db noise, 12" leads. UL/CSA/TUV Listed.

SQ: 40mm (1-5/8") T: 28mm (1-1/8") WT: .12



STOCK #	DESC.	TEA
32790-FN	24VDC 1-5/8" X 1-1/8" Sanyo Fan	\$4.95

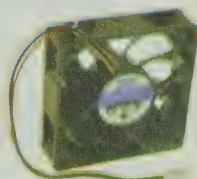
12VDC, 2-3/4" SQ. AVC BOX FAN

MFG: AVC
P/N: DA07020T12U
Volts: 12VDC
Current: .07A
CFM: ~54

REMOVED FROM NEW EQUIPMENT

Speed Sensor output, Plastic blades & housing, 1 sleeve and 1Ball bearing. 48db noise, 3" leads. UL/CSA/TUV/CE Listed.

SQ: 70mm (2-3/4") T: 20mm (3/4") WT: .14



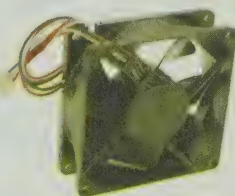
STOCK #	DESC.	TEA
32788-FN	12VDC 2-3/4" X 3/4" AVC Fan	\$2.95

12VDC, 3-1/8" X 1" NMB BOX FAN

MFG: NMB
P/N: 3110GL-B4W-B19
Volts: 12VDC
Current: .07A
CFM: ~25

Plastic blades & housing, ball bearings. 22db noise, 11" leads with 3 pin connector. +Red, -Black, Stall White.

SQ: 3-1/8" T: 1" WT: .18



STOCK #	DESC.	TEA
32685-FN	12VDC 3-1/8" X 1" Fan	\$3.95 \$2.95

12VDC, 3-5/8" SQ. SANYO BOX FAN

MFG: SANYO
P/N: 109P0912W401
Volts: 12VDC
Current: .21A
CFM: ~51

Speed Sensor output, Plastic blades & housing, Ball bearings. 33db noise, 11" leads. UL/CSA/VDE Listed.

SQ: 92mm (3-5/8") T: 25mm (1") WT: .32



STOCK #	DESC.	TEA
32787-FN	12VDC 3-5/8" X 1" Sanyo Fan	\$9.95

12VDC 4-11/16" SQ. SUNON BOX FAN

MFG: SUNON
P/N: KD1212PTB1-6A-GN
Volts: 12VDC
Current: .31A
CFM: 90

Plastic blades & housing. 45 db noise, Ball bearings. 12" leads. UL/canada/usa/TUV/CE.

SQ: 4-11/16" T: 1" WT: .5



STOCK #	DESC.	TEA
32610-FN	12VDC 4-11/16" X 1" Sunon Fan	\$4.95

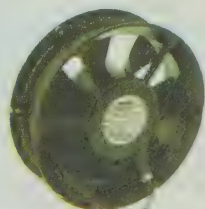
24VDC, 6-3/4" X 2" PAPST FAN

MFG: PAPST
P/N: 6224 N/9
Volts: 24VDC
Current: .75A
CFM: ~240

NEW OLD STOCK

Plastic blades, Metal housing. 55dB noise. Ball bearings. 4" leads with 3Pin connector. UL/CSA/TUV listed. RED: +24V, BLACK: -24V, Blue: Sensor. Output 5VDC TTL

Dia: 6-3/4" T: 2" WT: 1.8



STOCK #	DESC.	TEA
33259-FN	24VDC 6-3/4" X 2" Papst Fan	\$24.95

SOLID STATE RELAYS

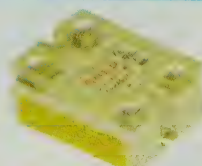
AC OUTPUT DC CONTROL

MFG: HOYMK
P/N: SSR series
CONTROL: 3-32VDC <10mA
OUTPUT RATING: 24-480VAC
ACTION: SPST-NO AC Loads Only
Opto-Isolated, "0" voltage turn-on,
Solid State Relay.
LED "Output ON" indicator. Screw terminals. CE Listed.



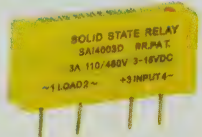
L: 2-7/16"	W: 1-3/4"	H: 1"	WT: .3
STOCK #	DESC.	1EA	
31931-RL	Hoymk 10A AC SSR	\$5.95	
31932-RL	Hoymk 25A AC SSR	\$8.95	
31933-RL	Hoymk 40A AC SSR	\$10.95	

MFG: GOLD
P/N: SAP series
CONTROL: 3-32VDC <10mA
OUTPUT RATING: 24-480VAC
ACTION: SPST-NO AC Loads Only
Opto-Isolated, "0" voltage turn-on,
Solid State Relay.
LED "Output ON" indicator.
Screw terminals. CE Listed.



L: 2-7/16"	W: 1-3/4"	H: 1"	WT: .3
STOCK #	DESC.	1EA	
17154-RL	Gold 10A AC SSR	\$7.95	

MFG: GOLD
P/N: SA series
CONTROL: 3-15VDC <10mA
OUTPUT RATING: 3A, 110-480VAC
ACTION: SPST-NO AC Loads Only
Opto-Isolated, "0" voltage turn-on,
Solid State Relay. Screw terminals.
LED "Output ON" indicator.
PC Mount 3/8" leads



L: 1-11/16"	W: 3/8"	H: 3/4"	WT: .03
STOCK #	DESC.	1EA	
18194-RL	Gold 3A AC Mini SSR	\$5.95	

120VAC SOLID STATE RELAY

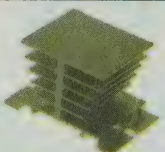
MFG: GORDOS
P/N: GGB-12400-5
CONTROL: 15VDC
OUTPUT RATING: 12A@ 250VAC
ACTION: SPST-NO
USED, Opto-Isolated, "0" voltage turn-on. 250" Output/ .187"
Input Quick connect Terminals.



L: 2-5/8"	W: 1-1/2"	H: 1-1/2" O/A	WT: .08
STOCK #	DESC.	1EA	
19231-RL	12A Gordos SSR	\$8.95	

SSR HEATSINK

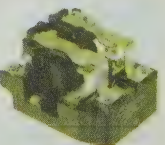
Anodized Heatsink for 2-7/16" X 1-3/4"
rectangular SSRs.
Drilled and tapped M4-0.7 for relay
mounting. Base notched for mounting
sink to chassis or panel



L: 3-1/8"	W: 1-15/16"	H: 1-15/16"	WT: .22
STOCK #	DESC.	1EA	
32052-HK	Solid State Relay Heatsink	\$3.95	

120VAC DPDT RELAY

MFG: MAGNECRAFT (SCHNEIDER)
P/N: WX199AX-14
COIL: 120VAC/280 ohms
CONTACT RATING: 25A FL @ 240VAC
2hp@250VAC 7A@ 50VDC
ACTION: DPDT
General purpose contactor with
screw terminals for all wiring contacts. UL/CSA listed

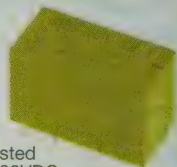


L: 3-3/8"	W: 2-1/2"	H: 2-1/8"	WT: .6
STOCK #	DESC.	1EA	
32886-RL	120VAC DPDT Relay	\$10.95	

ELECTRO-MECHANICAL RELAYS

LOW POWER DPDT RELAYS

MFG: HUI-KE
P/N: HK19F Series
COILS: 0.2W, Voltage/Resistance as Listed
CONTACT RATING: 1A@125VAC/2A@30VDC
ACTION: DPDT
DIP Socket/PC Mount General purpose relay. uULc/VDE listed,
RoHS compliant



L: 5/8"	W: 3/8"	H: 1/2"	WT: .01
STOCK #	DESC.	1EA	
32555-RL	3V, 45ohm DC DPDT Relay	\$1.29	
32556-RL	5V, 120ohm DC DPDT Relay	\$1.29	
32558-RL	9V, 400ohm DC DPDT Relay	\$1.29	
32559-RL	12V, 720ohm DC DPDT Relay	\$1.29	
32560-RL	24V, 2880ohm DC DPDT Relay	\$1.29	

LOW POWER SPDT RELAYS

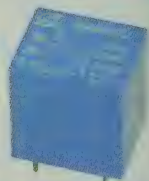
MFG: HUI-KE
P/N: HK41F Series
COIL: 0.2W, Voltage Resistance as Listed
CONTACT RATING: 3A@125VAC/30VDC
ACTION: SPDT
DIP Socket./PC Mount General purpose relay. uULc/VDE listed,
RoHS compliant



L: 5/8"	W: 3/8"	H: 1/2"	WT: .01
STOCK #	DESC.	1EA	
31934-RL	5V, 120ohm DC SPDT Relay	\$0.99	
31935-RL	12V, 700ohm DC SPDT Relay	\$0.99	

12VDC SPDT RELAY

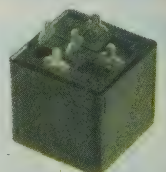
MFG: SANYOU
P/N: SRU-S-112L
COIL: 12VDC
CONTACT RATING: 12A@125VAC Res.
10A @ 240VAC
ACTION: SPDT
General purpose relay with PC terminals UL/usa/canada listed.



L: 3/4"	W: 5/8"	H: 3/4"	WT: .02
STOCK #	DESC.	1EA	
19300-RL	12VDC 12A SPDT Relay	\$0.99	

12VDC SPDT AUTO RELAY

MFG: TYCO
P/N: VF4-13
COIL: 12VDC/90 ohms
CONTACTS: SPDT
CONTACT RATING: N.O.: 40A/ N.C.: 30A@14VDC
General purpose, Automotive relay with 5 terminals for PCB
Mounting.



SQ: 1"	H: 1" Body	WT: .06
STOCK #	DESC.	1EA
31840-RL	12VDC 40A SPDT Auto Relay	\$0.99

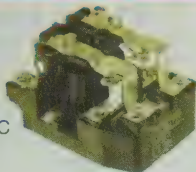
AUTO RELAY SOCKET

Pre-wired, Automotive relay plug-on
Socket with .250" Quick connect terminals
and 11" pig tail leads. Fits many 12V 5 terminal
Plug-in auto relays. 18AWG White & Black Coil
leads, 14AWG Red, Yellow, Blue contact leads.



L: 3-3/8"	W: 2-1/2"	H: 2-1/8"	WT: .08
STOCK #	DESC.	1EA	
18546-RL	Auto Relay Socket	\$1.95	

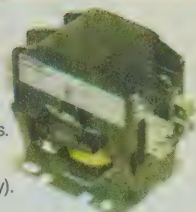
24VDC DPDT RELAY



MFG: TYCO
P/N: PRD-11DYO-24
COIL: 24VDC/280 ohms
CONTACT RATING: 25A FL@ 240VAC
 2hp@250VAC 7A@ 50VDC
ACTION: DPDT
 General purpose contactor with
 screw terminals for all wiring contacts. UL/CSA listed
L: 3-3/8" **W:** 2-1/2" **H:** 2-1/8" **WT:** .6

STOCK #	DESC.	1EA
21236-RL	24VDC DPDT Contactor	\$7.95

24VAC DPST RELAY

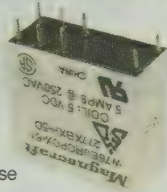


MFG: ZETTLER
P/N: XMCK-302024C
COIL: 24VAC/12 ohms
CONTACT RATING:
 240/277VAC: 25A FLA/150LRA/30A Res.
 480VAC: 25 FLA/125LRA/30A Res.
ACTION: DPST-NO
 Panel Mount HVAC Contactor (relay).
 Quick connect terminals.
 UL/us/canada/CE listed.

L:	3-1/2"	W:	2-1/8"	H:	2-5/8"	WT:	.65
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STOCK #	DESC.	1EA
31821-RL	24VAC, 30A DPST-NO Contactor	\$12.95

5VDC DPDT RELAY

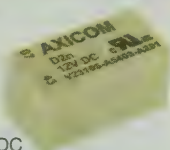


MFG: MAGNECRAFT
P/N: W76EURPCPX-61
COIL: 5VDC/47 ohms
CONTACT RATING: 5A@250VAC
ACTION: DPDT
 Epoxy sealed, P.C. mount general purpose
 relay. UL/CSA listed.

L:	1-1/16"	W:	1/2"	H:	1"	WT:	.04
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STOCK #	DESC.	1EA
18482-RL	5VDC, 5A DPDT Relay	\$5.95

12VDC DPDT RELAY



MFG: AXICON/TE
P/N: D2n V23105-A5403-A201
COIL: 12VDC/0.4W, 360 Ω
CONTACT RATING: 3A@250VAC/220VDC
ACTION: DPDT
 DIP Socket/PC Mount General purpose relay. uULc listed,
 RoHS compliant

L:	3/4"	W:	3/8"	H:	7/16"	WT:	.005
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STOCK #	DESC.	1+EA	25+EA
32715-RL	12VDC Axicon DPDT Relay	\$1.89	\$1.69

120VAC SPDT RELAY



MFG: OMRON
P/N: LY1S-AC12V
COIL: 120VAC/100 ohms
CONTACT RATING: 10A@ 240VAC/30VDC;
ACTION: SPDT
 General purpose relay with .200" Quick connect
 terminals for wiring or socket mounting. UL/CSA Listed.

L:	1-11/16"	W:	13/16"	H:	1-3/8" (Body)	WT:	.08
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STOCK #	DESC.	1EA
32782-RL	120VAC, 10A SPDT Relay	\$4.95

24VAC SPST RELAY



MFG: ZETTLER
P/N: XMCK-30D024C
COIL: 24VAC/17 ohms
CONTACT RATING:
 240/277VAC: 25AFLA/150LRA/30A Res.
 480VAC: 25FLA/125LRA/30A Res.
ACTION: SPST-NO
 Panel Mount HVAC Contactor (relay). Quick
 connect terminals. UL/US/canada/CE listed.

L:	3-1/2"	W:	2-1/8"	H:	2-5/8"	WT:	.5
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STOCK #	DESC.	1EA
31820-RL	24VAC, 30A SPST-NO Contactor	\$9.95

240VAC 4PDT RELAY

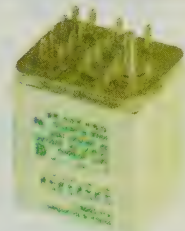


MFG: MIDLAND-ROSS
P/N: 156-24U100
COIL: 240VAC/14.7Kohms
RATED: 3A@ 28VDC/120VAC Resistive;
 1/10hp@120/240VAC
ACTION: 4PDT
 General purpose relay with PC terminals UL/CSA listed.

L:	1-1/4" Body	W:	1-1/8"	H:	7/8"	WT:	.06
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STOCK #	DESC.	1EA
18954-RL	240VAC, 3A 4PDT Relay	\$5.95

120VAC 4PDT RELAY



MFG: P&B
P/N: KH5569-1
COIL: 120VAC/3900 ohm
CONTACT RATING: 3A@125VAC ind.
 /28V Res.
ACTION: 4PDT
 Hermetic sealed metal can, socket/
 solder mount general purpose relay.
 UL/CSA listed.

L:	1-1/8"	W:	7/8"	H:	1-1/4" Body	WT:	.1
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STOCK #	DESC.	1EA
18502-RL	120VAC 4PDT P&B Sealed Relay	\$4.95

120VAC TIME DELAY RELAY



MFG: MIDTEX
P/N: 614-43T3A4
Coil: 120VAC
Contacts: 10A, 1/3hp @ 120VAC
 3PDT adjustable Time Delay relay. 6-60sec-
 onds adjustable DELAY on ENERGIZE. Socket
 mount with .187 quick connect terminals.

H:	3" O/A	W:	1-1/2"	H:	1-7/8" Body	WT:	.2
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STOCK #	DESC.	1EA
19082-RL	120VAC 3PDT Time Delay Relay	\$14.95

110VAC DPST-NO RELAY



MFG: OMRON
P/N: G7L-2A-P-CB
COIL: 100-110VAC
CONTACT RATING: 20A@277VAC
 Resistive & Inductive, 1.3KW (Tungsten)
ACTION: DPST-NO
 P.C. Board mount, UL/CSA/TUV/CE Listed

H:	2-1/16"	W:	1-3/8"	H:	1-1/2" Body	WT:	.3
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STOCK #	DESC.	1EA
18900-RL	110VAC, 20A DPST Relay	\$4.95

24VDC DPDT RELAY



MFG: P&B
P/N: K10P1D55-24
COIL: 24VDC/640 ohms
CONTACT RATING: 10A@ 277VAC,
 15A, 1/3hp @120VAC; 15@30VDC Resistive
ACTION: DPDT
 PC Mount, General purpose relay. UL/CSA Listed

L:	1-1/8"	W:	3/4"	H:	1-1/2"	WT:	.1
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STOCK #	DESC.	1EA
31098-RL	24VAC, 10A DPDT P&B Relay	\$3.95

24VDC SPDT RELAY



MFG: ACC
P/N: 33A23S24
COIL: 24VDC/ 1800ohms
CONTACT RATING: 5A/120VAC
ACTION: SPDT
 PC Mount General purpose relay. UL/CSA listed

L:	1"	W:	11/16"	H:	13/16"	WT:	.04
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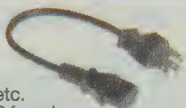
STOCK #	DESC.	1EA
31402-RL	24VDC ACC SPDT Relay	\$0.49

1FT. IEC POWER CORD

1ft. long, 18-3 SVT, power cord for such items as computers, printers, equip. etc. Std. 3 prong plug on one end and sdt. IEC female on other. Ideal for racks or benches with plug strips, No tangle of cords. CSA listed.

L: 1ft WT: .9

STOCK #	DESC.	1EA	50+EA
14908-WI	1ft IEC Power Cord	\$2.25	\$1.99



5FT,18-3 AWG POWER CORD

1.5m (5ft.) 18-3AWG, SVT power cord. Standard 3 prong NEMA 5 plug on one end, Standard IEC C-5 (Mouse Ears) female on other. 120VAC 10A rated. ETL Listed

L: 5ft. (1.5m) WT: .35

STOCK #	DESC.	1EA	50+EA
32466-CB	5ft C-5 Power Cord	\$2.95	\$2.49

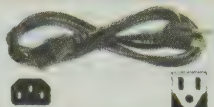


5FT,18-3 AWG IEC POWER CORD

5ft. 18-3AWG, SVT power cord. Standard 3 prong plug on one end, standard IEC C13 female on other. 120VAC 10A rated. UL/us/canada listed.

L: 5ft. (1.5m) WT: .4

STOCK #	DESC.	1EA	50+EA
31447-CB	5ft IEC 10A Cordset	\$2.95	\$2.49



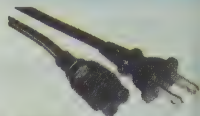
5.5FT. REPLACEMENT CORDS

A B C D

5-1/2ft, consumer power cord. 250VAC/4A Max. 2 blade Non-polarized molded plug on one end, 2 pin female notebook/laptop/Audio/TV equipment plug on other. Black jacket.

L: 5-1/2ft WT: .25

STOCK #	FIG	DESC.	1EA	50+EA
15447-CB	A	Rnd. Non-Polar Cord.	\$1.25	\$0.99
15448-CB	B	Rnd. Non-Polar Cord	\$1.25	\$0.99
15449-CB	C	Polar Cord Set	\$1.25	\$0.99
15452-CB	D	Keyed TV Cord	\$1.25	\$0.99

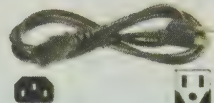


6FT,18-3 AWG IEC POWER CORD

6ft, 18-3 AWG power cord used in equipment. Standard 3 prong molded plug on one end, standard IEC female on other end. Black jacket. UL listed. Rated 125VAC 10A.

L: 6ft. over all WT: .4

STOCK #	DESC.	1EA	50+EA
12943-CB	6ft IEC 10A Cordset	\$3.95	\$3.49



46IN,18-3 AWG IEC POWER CORD

USED, 46in. 18-3AWG, SVT power cord. Standard 3 blade NEMA 5-15 plug on one end, standard IEC C13 female on other. 120VAC 10A rated. UL/canada listed.

L: 46in. WT: .25

STOCK #	DESC.	1EA
33355-CB	46in. IEC 10A Used Cordset	\$1.49



14FT,18-3 AWG IEC POWER CORD

14ft, 18-3 AWG SVT Black jacket, power cord for electronic equipment. Standard NEMA 5, 3 prong molded plug on one end, standard IEC C13, female on other end. Rated 10A/125VAC

L: 14ft WT: .68

STOCK #	DESC.	1EA
31849-CB	14ft IEC 10A Cordset	\$6.95



16FT,18-3 AWG IEC POWER CORD

16ft, 18-3 AWG SVT Black jacket, power cord for electronic equipment. Standard NEMA 5, 3 prong molded plug on one end, standard IEC C13, female on other end. Rated 10A/125VAC

L: 14ft WT: .78

STOCK #	DESC.	1EA
31850-CB	16ft IEC 10A Cordset	\$7.95



6FT, 18-2 AWG POWER CORD

Removed From New Equipment. 6ft, 18AWG, SPT-2 Black jacket, Non-Polarized power cord for electronic equipment. 2 prong molded plug on one end and cutoff other end. Rated 2.5A/125VAC

L: 6ft WT: .2

STOCK #	DESC.	1EA
32947-CB	6ft. 18AWG "ZIP" Power Cord	\$1.95

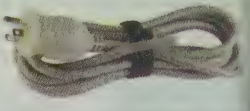


9FT,18-3 AWG POWER CORD

USED 9ft, 18-3 AWG SPT dark gray jacket, power cord for electronic equipment. Hospital Grade 3 prong molded plug NEMA 5-15P on one end, flush cut on other. International color coded: Brown= Line, Blue=Neut. Green/Yellow= Ground. UL/CSA listed. Rated 10A/125VAC

L: 9ft WT: .8

STOCK #	DESC.	1EA
31127-CB	9ft IEC Hospital Cord	\$3.95

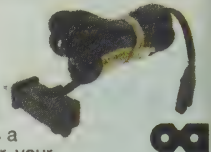


12FT,18-3 AWG IEC TAP CORD

18-2 AWG SPT power tap cord with Polarized NEMA plug & socket molded together on one end. Other end has a class IEC-C7P polarized female for your equipment. Rated 10A 125V on Plug/Recep. 7A125V on C7P end. UL/CSA Listed.

L: 12ft WT: .45

STOCK #	DESC.	1EA
31907-CB	12ft IEC C7P Tap Cordset	\$4.95

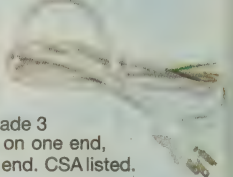


9FT,18-3 AWG POWER CORD

Alpha Wire P/N 804, 9ft, 18-3 AWG SPT white jacket, power cord for electronic equipment. Hospital Grade 3 prong molded NEMA 5-15P plug on one end, and stripped back 2in. on the other end. CSA listed. Rated 10A/125VAC

L: 9ft WT: .65

STOCK #	DESC.	1EA
32173-WI	9ft IEC Hospital Cord	\$4.95



3FT. IEC CORDSET

3ft, 18-2 AWG, SPT-2 black power cord. Standard 2 blade Polarized molded plug on one end, IEC Class 2-C7, 2 pin female notebook/laptop or equipment plug on other. 120VAC, 4A rated

L: 3ft. (1m) WT: .1

STOCK #	DESC.	1EA
33151-CB	Power Cord, 3ft. NEMA Plug to IEC C-7	\$0.99



SURGE PROTECTED STRIP

Wall mount surge protector with 4 outlets protected L/N, L/Gnd & N/Gnd. 1875W max. Load. Protect electronic equipment from electrical spikes. Built in status indicator light. Clamp Volts: 330V. 4ft. line cord. UL listed.



WT: .22

STOCK #	DESC.	1EA
18971-MI	4 Outlets Surge Protector	\$8.95

IEC POWER PLUG ADAPTER

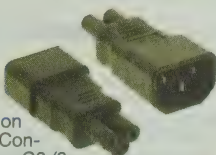
Adapter with a IEC C14 receptacle on one end to a C5 plug on the other. Connects an IEC C13 (3 blade) cord to a C6 (3 round pins) inlet.

Rated: 10A@125VAC/2.5A@250VAC. CE Listed.

L: 2-3/8"

WT: .04

STOCK #	DESC.	1EA
32605-PL	IEC Adapter C13 to C6	\$3.49



SECURED "Y" ADAPTER

23in. 14/3 STW "Y" splitter extension cable with locking brackets to stop annoying & dangerous cord disconnections. NEMA 5-15P Plug to 2 NEMA 5-15R females. Rated 15A (Total) @ 125VAC. UL Listed

L: 23"

WT: 1.4

STOCK #	DESC.	1EA
31925-CB	Secured "Y" Cord Adapter	\$19.95



20A GROUND FAULT OUTLET

Cooper VGF15BK-L commercial grade Ground Fault Interrupter with "Shock Sentry™". Meets UL943 Class A requirements. Indicator for "Correct Wiring/Trip". Rated: 20A/20A Feedthrough. 120VAC. Black with matching wall plate. Fits Standard depth box. UL/us/c listed.

L: 4-1/4" W: 1-5/8" T: 1-3/4"

WT: .4

STOCK #	DESC.	1EA
32109-MI	VGF GFCI Outlet, 15A Black	\$6.95



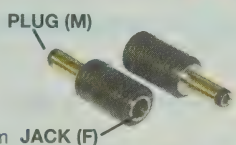
POWER PLUG ADAPTERS

Plastic body Barrel connector, 5.5mm O/D Plug TO 2.5 or 2.1mm O/D Adapters.

L: 1-7/16"

WT: .014

STOCK #	DESC.	1EA
17573-PL	5.5/2.1F to 5.5/2.5M Adapter	\$1.95
18238-PL	5.5/2.5F to 5.5/2.1M Adapter	\$1.95



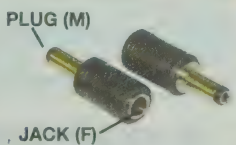
POWER PLUG ADAPTERS

Plastic body Barrel adapters. Convert the more common 5.5mm/2.1mm power supplies to , 4 pin, phones, players etc.

L: 1-7/16"

WT: .01

STOCK #	DESC.	1EA
33034-PL	4.8/1.7mm Plug to 5.5/2.1 Jack Adapter	\$1.95
33031-PL	4.0/1.7mm Plug to 5.5/2.1 Jack Adapter	\$1.95
33030-PL	3.5/1.3mm Plug to 5.5/2.1 Jack Adapter	\$1.95
33033-PL	3.0/1.1mm Plug to 5.5/2.1 Jack Adapter	\$1.95
33032-PL	2.5/0.7mm Plug to 5.5/2.1 Jack Adapter	\$1.95



COAXIAL POWER JACKS

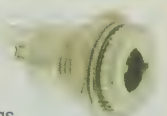


Plastic, Chassis mount power connector. Designed for 5.5mmO/D plugs. Aux. contact connected to sleeve with no plug inserted. Solder terminals

L: 7/8" Mtg. Hole: 5/16" Dia.: 15/32" WT: .007

STOCK #	DESC.	1EA
18549-PL	5.5/2.1mm Power Jack	\$1.49

5.5MM POWER JACKS



Metal, Chassis mount coaxial power connector. Designed for 5.5mmO/D plugs. Solder terminals

Mtg. Hole: 7/16" (11mm)

L: 5/8" (Body) Dia.: 1/2" (12.5mm) WT: .014

STOCK #	DESC.	1EA
32104-PL	5.5/2.1mm Metal Power Jack	\$1.49
32105-PL	5.5/2.5mm Metal Power Jack	\$1.49

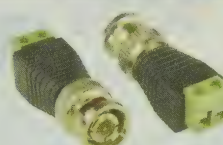
BNC TO TERMINAL ADAPTER

BNC Male connector to Screw Terminal adapter.

L: 1-5/8"

WT: .03

STOCK #	DESC.	1EA
19456-PL	BNC/UTP Balun Adapter	\$1.59



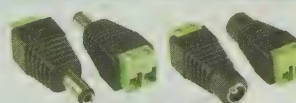
POWER ADAPTORS

Adapts wire leads to coaxial/barrel power connectors Screw terminals to 5.5mm O/D plugs and Jacks.

L: 1-5/8"

WT: .07

STOCK #	DESC.	1EA
19452-PL	2.1mm I/D Plug Adapter	\$0.89
19453-PL	2.5mm I/D Plug Adapter	\$0.89
19454-PL	2.1mm I/D Jack Adapter	\$0.89
19455-PL	2.5mm I/D Jack Adapter	\$0.89

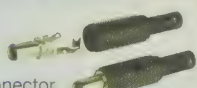


5.5MM POWER PLUGS

Plastic shell, cable end power connector. Designed for 5.5mm equipment jacks. Solder terminals

L: 1-7/8" Dia.: 13/32" WT: .007

STOCK #	DESC.	1EA
19084-PL	5.5/2.1mm Power Plug	\$0.59



5.5MM POWER JACKS

Plastic shell, cable end power connector. Designed for 5.5mm O/D plugs. Solder terminals

L: 1-5/8" Dia.: 13/32" WT: .007

STOCK #	DESC.	1EA
19160-PL	5.5/2.1mm Power Jack	\$0.99
19161-PL	5.5/2.5mm Power Jack	\$0.99

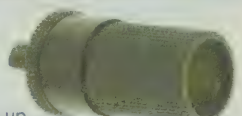


CIGARETTE LIGHTER SOCKET

Black plastic Socket for making up your own cable. Brass contacts, solder connections. Max. Voltage: 24VDC Max Current: 4A

L: 3" DIA: 1-1/4" WT: .04

STOCK #	DESC.	1EA
33437-PL	Cigarette Lighter Socket	\$1.95



9V BATTERY CLIPS



End exit, vinyl cover, 6" tinned red & black leads

WT: .004

STOCK #	DESC.	1EA	25EA
22600-BT	End Exit 9V Battery Clip	\$0.19	\$0.17

BATTERY CLIP TO COAXIAL PLUG

9V Battery Cap to a molded 5.5mm/2.1mm coaxial Plug with 2-1/2in. wire leads in between.

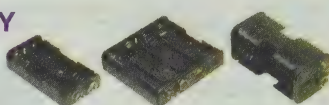
L: 4-1/2"



WT: .009

STOCK #	DESC.	1EA
31085-AD	9V Battery Clip Adaptor	\$0.99

"AA" BATTERY HOLDERS



Plastic holders for "AA" batteries.

9V battery snap terminals for connections.

Dual: L: 2-3/8" W: 1-5/16" H: 5/8"

WT: .01

4 Flat: L: 2-3/8" W: 2-7/16" H: 5/8"

WT: .02

4 Sq: L: 2-3/8" SQ: 1-1/4" H: 5/8"

WT: .02

STOCK #	DESC.	1EA
32526-BH	Dual "AA" Cell Holder Flat	\$0.75
32527-BH	4 "AA" Cell Holder Flat	\$1.20
32528-BH	4 "AA" Cell Holder Square	\$1.20

USB TO COAXIAL POWER PLUG



USB 2.0 cable with a Type A male on one end and a 5.5/2.1mm Coaxial Power Plug on the other.

L: 32"

WT: .04

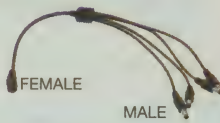
STOCK #	DESC.	1EA
32437-CB	32"USB/Power Cable	\$1.95

POWER SPLITTER CABLES

Splitter cable with 5.5/2.1mm Female Power Jack to four 5.5/2.1mm Male Plugs.

Break out at 17cm.

L: 36cm (14.5")



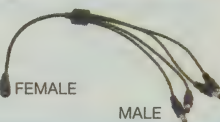
WT: .08

STOCK #	DESC.	1EA
32500-CB	4 Way Power Splitter 5.5/2.1mm	\$3.95

Splitter cable with 5.5/2.5mm Female Power Jack to four 5.5/2.5mm Male Plugs.

Break out at 22cm.

L: 43cm (17")



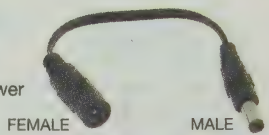
WT: .08

STOCK #	DESC.	1EA
32501-CB	4 Way Power Splitter 5.5/2.5mm	\$3.95

Adapter cable with Male Power Plug to a Female Jack.

Sized as listed below.

L: 16cm (6.5")



WT: .02

STOCK #	DESC.	1EA
32504-CB	Power Adapter 5.5/2.1mm M-5.5/2.5F	\$1.95
32505-CB	Power Adapter 5.5/2.5M-5.5/2.1F	\$1.95

EURO TERMINAL BLOCK



12 position, double entry, Euro style terminal blocks.

14mm terminal Spacing & mounting holes.

Voltage: 380V/Rated Current: 30A

Wire: 10-18AWG/Solid/Stranded 10AWG Solid

Recessed screws in top. CE Listed.

L: 6-5/16"

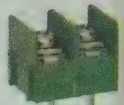
H: 5/8"

W: 7/8"

WT: .06

STOCK #	DESC.	1EA
32675-TS	12 Pos. 30A Euro Strip	\$1.95

TERMINAL STRIP



7.62mm (.30in.) Pitch, 2 position, end stackable,

P.C. mount, terminal blocks. Voltage: 300V/

Rated Current: 20A

Wire: 12-22AWG

Steel screws, Tin plated brass terminals

L: 16mm

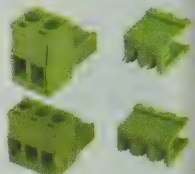
H: 12.4mm

W: 12mm

WT: .006

STOCK #	DESC.	1EA
30164-TS	2 Pos. 7.62mm Terminal Strip	\$0.59

HEADER PIN & PLUGS



2 or 3 position, end stackable, Header

Pin & Plug Pairs.

PC Mount Header Pins,

Right Angle Screw clamp Sockets.

Pin Spacing: 5.08mm C/C.

Wire Range: 14-22AWG

Rated Voltage: 300V/ Current: 15A. CSA Listed

SOLD AS PIN & PLUG PAIRS

L: 10/15mm

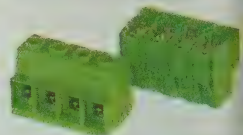
H: 15mm

T: 15.2mm

WT: .01

STOCK #	DESC.	1EA	10EA
19590-TS	2 Pos. Pin/Plug Pair	\$0.79	\$0.69
19591-TS	3 Pos. Pin/Plug Pair	\$0.99	\$0.89

HIGH POWER TERMINAL BLOCK



4 position, end stackable, P.C. mount, terminal blocks. Voltage:

1000V/Rated Current: 90A

Wire: 2-20AWG, 35mm²

Recessed screws in top. RoHS compliant

L: 60mm

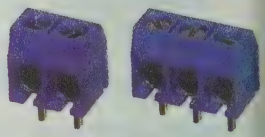
H: 39mm

W: 31mm

WT: 18

STOCK #	DESC.	1EA
18522-TS	4 Pos. Hi-Power Strip	\$1.20

TERMINAL STRIP



End stackable, P.C. mount,

terminal strip. Voltage: 300V

Rated Current: 15A

Pin Spacing: 5mmC/C.

Wire: 14-22AWG

us/UL/canada/CE listed

2Pos. L: 10mm

H: 10mm

T: 7.6mm

WT: .04

3Pos. L: 15mm

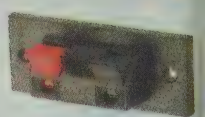
H: 10mm

T: 7.6mm

WT: .04

STOCK #	DESC.	1EA
18318-TS	2 Pos. 7.62mm Terminal Strip	\$0.39
18319-TS	3 Pos. 7.62mm Terminal Strip	\$0.49

QUICK CONNECT TERMINAL STRIP



2 position red & black terminal strip for power supplies, speakers, audio & test equipment etc. Solder tabs on back.

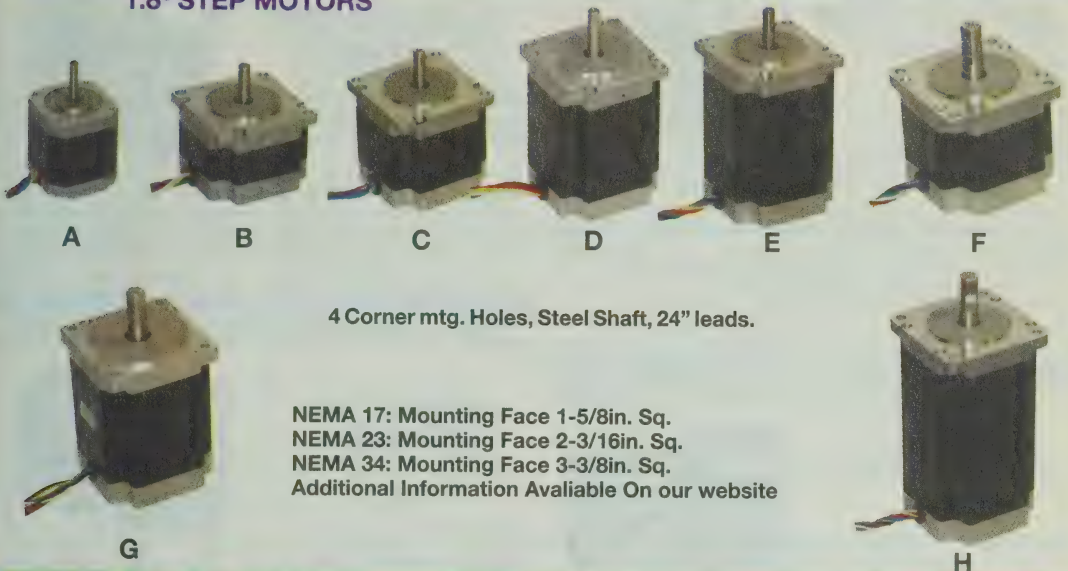
L: 2"

W: 7/8"

WT: .02

STOCK #	DESC.	1EA	10EA
24298-TS	2 Pos. Quick Connect	\$0.50	\$0.39

1.8° STEP MOTORS



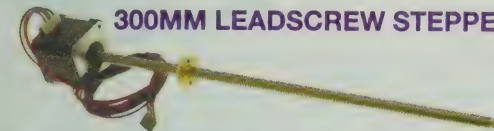
4 Corner mtg. Holes, Steel Shaft, 24" leads.

NEMA 17: Mounting Face 1-5/8in. Sq.
NEMA 23: Mounting Face 2-3/16in. Sq.
NEMA 34: Mounting Face 3-3/8in. Sq.
Additional Information Available On our website

H

STOCK #	FIG.	NEMA	VDC	A	L1	HOLD. TORQ.	P/N	TYPE	LENGTH (BODY)	SHAFT	WT.	1EA
18735-MS	A	17	5.2V	.5	10.5	1.5Kg/cm	42BHH34-050A-18	6 lead	1-3/8"	5 X 17mm	.5	\$39.95
18733-MS	A	17	12V	.31	38	1.6Kg/cm	42BHH34-031A-18G	6 lead	1-3/8"	5 X 17mm/flat	.5	\$39.95
17453-MS	A	17	5.2V	1	5.2	3.2Kg/cm	42BHH48-100E-24	6 lead	2"	5 X 22mm	.84	\$15.95
18734-MS	A	17	12V	.4	30	3.2Kg/cm	42BHH48W-040B-24	6 lead	1-7/8"	5 X 22mm	.76	\$10.95
18686-MS	B	23	2.8V	2	1.4	4.2Kg/cm	57BHH41-200B-21	6 lead	1-5/8"	6.35 X19mm	1	\$12.95
17454-MS	B	23	24V	.34	71	4.4Kg/cm	57BHH41-034A-21	6 lead	1-5/8"	6.35 X19mm	1	\$17.95
17455-MS	C	23	6.2V	1	6.2	9Kg/cm	57BHH56-10D-21N	6 lead	2-3/8"	6.35 X19mm	1.6	\$14.95
18728-MS	C1	23	6.2V	1	6.2	9Kg/cm	57BHH56-10D-21DH	6 lead	2-3/8"	6.35 X20mm/Dual	1.6	\$16.95
18189-MS	D	23	5.7V	2.3	2.5	16Kg/cm	57BHH76-200B-25C	6 lead	3"	6.35 X25mm	2.3	\$23.95
18729-MS	D1	23	5.7V	2.3	2.5	16Kg/cm	57BHH76-200B-26DA	6 lead	3"	6.35 X24mm/Dual	2.4	\$23.95
18687-MS	D	23	4.5V	2.5	1.8	18Kg/cm	57BHH76-250E-21G	6 lead	3"	6.35 X25mm	3.4	\$24.95
17456-MS	E	23	3.6V	3	1.2	21Kg/cm	57BHH82-300E-21U	6 lead	3-1/4"	6.35 X19mm	2.6	\$14.95
17458-MS	F	34	3.0V	3	1	23Kg/cm	86BHH76-400C-35	6 lead	3"	13 X35mm	4.7	\$64.95
18190-MS	G	34	6.0VDC	2	3	48Kg/cm	86BHH114-200C-37BS	8 lead	4-17/32"	13 X35mm	8.1	\$80.95
17457-MS	H	34	7.8VDC	2	3.9	63Kg/cm	86BHH150-200A-37BS	8 lead	6"	13 X35mm	11	\$79.95

300MM LEADSCREW STEPPER



3D Printer/CNC Leadscrew with Stepmotor
Stepper motor with Leadscrew designed for 3D printing or CNC machines.

Motor: NEMA 17/Size 42, 2 Phase 4 lead

Step Angle : 1.8deg.

Coil: 2.4V/1.5A/1.6ohm/3.2mH

Leadscrew:

Dia. 8mm

Thread: T8X2-4 Start, 8mm Lead

Length: 320 mm long,

Effective thread length:-275mm

Brass Travler Nut, 22mm Dia, four M3-0.5 threaded holes

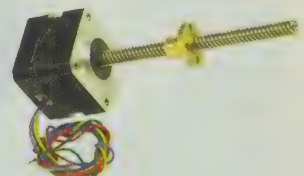
Includes 1m cable for stepper

NOTE: Leadscrew Not removable from Motor

L: 355mm O/A W: 42mm HT: 50mm) O/A WT: .2

STOCK #	DESC.	1EA
32386-MI	300mm Leadscrew Stepper	\$34.95

LINEAR STEP MOTOR



P/N: 42HD0403-100L

NEMA: 17

COIL: 1.5A/1.3 ohm

TYPE: 2 Phase 4 Lead Bi-Polar or H Drive

1.8 Degree stepper motor with a 8mm Dia./2Pitch X 100mm steel 4 Start Helical leadscrew with brass traveler. 8mm/turn or .04mm/step.

4 corner M3X 0.5 metric mounting holes. 13" leads.

SQ: 1-5/8"

L: 1-3/8" (Body)

WT: .6

STOCK #	DESC.	1EA
31564-MS	Linear Step Motor	\$29.95

1.8 DEG. STEP MOTOR



MFG: ASTROSYN

P/N: 23LM-K351-P1V

NEMA: 23

COIL: 5ohm/7.3mH

TYPE: Uni-Polar 6 lead

STEP ANGLE: 1.8 deg

Specifications/Features:

Custom motor with a 1/4" dia. X 1/8" steel shaft with a pressfit 1/2"/dia. 20 tooth, plastic gear. Removable rubber shock mount. 4 corner mounting holes.

6 PIN Molex 2.0mm Microblade Header Connector

4" PIGTAIL SUPPLIED

SQ: 2-1/4"

L: 1-15/16" (Body)

WT: 1.2

STOCK #	DESC.	1EA
31394-MS	Astrosyn K351Step Motor	\$38.95

PRINTER LEADSCREW KIT



Precision Leadscrew kit includes:

400 mm long, 8MM Dia. X 2mm Pitch, single start Leadscrew

Assembled Effective thread length:-350mm

Brass Travler Nut

2X Pillow Block Shaft Bearing supports

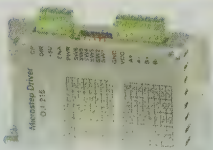
Helical cut 8mm to 6mm shaft Coupling

NOTE: Assembly Required

L: 415mm O/A W: 55mm HT: 30mm WT: .55

STOCK #	DESC.	1EA
32396-HD	400mm Leadscrew Kit	\$39.95

MINI STEP MOTOR DRIVER



P/N: CW-215

INPUT: 12-36VDC

OUTPUT: Selectable up to 1.5A max.

STEP ANGLE: 1.8 deg (200steps/Rev.)

Microstep: 1/2-1/4-1/8-1/16-1/32-1/64

Full bridge driver for hybrid steppermotors.

Switch Selectable output current.

Over temp Protected.

Opto isolated Step pulse input (Clock input +5V Level).

Opto Isolated Direction input (+5V Level)

Opto Isolated Reset input (+5V Level)

Terminal strips in/out.

L: 3-15/16"

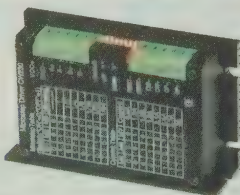
W: 2-5/16"

T: 3/4"

WT: .5

STOCK #	DESC.	1EA
18187-MS	Mini Stepper Driver	\$54.90

3A STEP MOTOR DRIVER



P/N: CW230

INPUT: 24-36VDC

OUTPUT: Selectable up to 3A max.

STEP: Full & 1/2-1/4-1/8-1/16-1/32-1/64 microstep

Full bridge driver for hybrid steppermotors.

Switch Selectable output current.

Over temp & Output miswire Protected.

Opto isolated Step pulse input (Clock input +5V Level).

Opto Isolated Direction input (+5V Level)

Opto Isolated Reset input (+5V Level)

Terminal strips in/out.

L: 4-5/8"

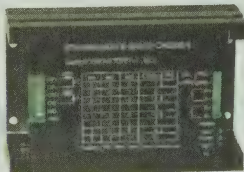
W: 2-3/4"

H: 1-3/8"

WT: .7

STOCK #	DESC.	1EA
17451-MS	CW230 Stepmotor Driver	\$48.50

5A STEP MOTOR DRIVER



P/N: CW250

INPUT: 20-60VDC

OUTPUT: Selectable up to 5A max.

STEP: Full & 1/8 microstep

Full bridge driver for hybrid steppermotors.

Switch Selectable output current.

Over temp & Output miswire Protected.

Opto isolated Step pulse input (Clock input +5V Level). Opto

Isolated Direction input (+5V Level)

Terminal strips in/out.

L: 5-3/4"

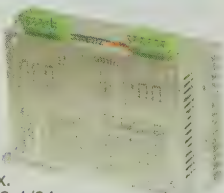
W: 3-3/4"

H: 1-3/4"

WT: 1.5

STOCK #	DESC.	1EA
17452-MS	CW250 Stepmotor Driver	\$49.95

6A STEP MOTOR DRIVER



P/N: CW260C

INPUT: 24-70VDC

OUTPUT: Selectable up to 6A max.

STEP: Full & 1/2-1/4-1/8-1/16-1/32-1/64-

1/128-1/256-1/5-1/10-1/25-1/50-1/125-1/250 microstep

Full bridge driver for hybrid steppermotors.

Switch Selectable output current.

Over temp & Output miswire Protected.

Opto isolated Step pulse input (Clock input +5V Level).

Opto Isolated Direction input (+5V Level)

Opto Isolated Reset input (+5V Level)

Terminal strips in/out.

L: 5-13/16"

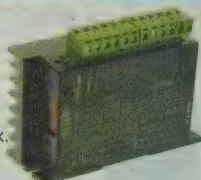
W: 3-13/16"

T: 1-3/16"

WT: 1.2

STOCK #	DESC.	1EA
18188-MS	CW260C Step Motor Driver	\$96.00

3.5A STEP MOTOR DRIVER



INPUT: 9-40CDC (24 Nominal)

OUTPUT: Selectable up to 3.5A max.

STEP: Full & 1/2, 1/4, 1/8, 1/16, 1/32 Microstep

Full bridge driver for 4 or 6 wire hybrid steppermotors. Automatic drop to Hold current with no Step Input. Switch Selectable output current. .5A-3.5A Over temperature & current Protected. Under Voltage Shutdown, Opto isolated Step, Direction & Enable Inputs. (+5V Level) Terminal strips in/out. Power and Run LEDs.

L: 3" (76cm)

W: 2" (51cm)

H: 1-1/2" (38cm)

WT: .3

STOCK #	DESC.	1EA
32383-MS	Stepmotor Driver, 3.5A	\$19.95

AC POWERED DRIVER



P/N: CW1108

INPUT: 110VAC, 60hz

OUTPUT: Selectable from .5 to 8A max.

STEP: Full & 1/2; 1/4; 1/5; 1/6; 1/8; 1/10; 1/16; 1/18; 1/20; 1/32; 1/40; 1/50; 1/64; 1/112; 1/256 microstep

Internal microcontroller chip. Full bridge driver for hybrid steppermotors. Switch Selectable output current. Opto isolated Step pulse input (Clock input +5V Level). Opto Isolated Direction & Enable inputs (+5V Level) Terminal strips in/out. Internal cooling Fan.

L: 7-11/16"

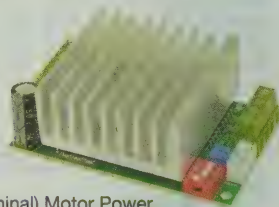
W: 3-1/4"

H: 1-3/4"

WT: 3.5

STOCK #	DESC.	1EA
18727-MS	CW1108 AC Stepmotor Drive	\$169.95

4A STEP MOTOR DRIVER



INPUT: 10-42VDC (32V Nominal) Motor Power

5VDC for Opto-isolators

OUTPUT: Adjustable up to 4.5A max. 4.2 nom.

STEP: Selectable Full & 1/2-1/8-1/16 Microstep

Compact driver using the TB6600HG IC. Full bridge driver for 4 or 6 wire steppermotors. Automatic drop to 1/2 current with no step Input. Over temperature & current shutdown. Under Voltage lockout Opto-isolated Step, Direction & Enable Inputs. (Active Low). Terminal strip for Outputs. Terminal Strip & HT-396 4 Pin Header for Inputs Power, Run & Alarm LEDs.

L: 3-3/16" (82cm)

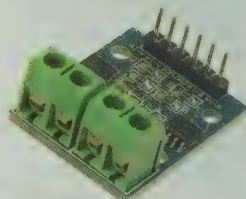
W: 2" (52cm)

H: 1-1/4" (33cm)

WT: .3

STOCK #	DESC.	1EA
32381-MS	Stepmotor Driver 4.2A TB66000	\$17.95

STEP OR DC MOTOR DRIVER



Dual Driver for Arduino & Microcontrollers

Designed around the L9110S IC, board can drive 1 four wire, 2 phase stepper or 2 DC motors. TTL logic control input. Freeware available through www.arduino.cc.en and others.

Power: 2.5-12VDC

Output: .8A cont. 1.5A Peak

Input: TTL logic levels

Connections: 6 Pin .1in Pitch Header for Power & Input

Terminal strip for A₊, A₋, B₊, B₋ motor

LED for Power indication.

L: 1-1/8"

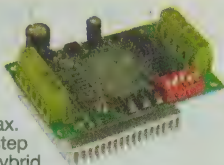
W: 15/16"

H: 1/2"

WT: .02

STOCK #	DESC.	1EA
31596-MP	2Channel H Bridge Driver, L9110	\$2.95

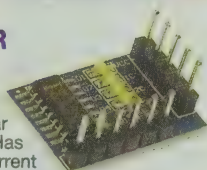
3A STEP MOTOR DRIVER



INPUT: 10-35VDC (24V Nominal)
OUTPUT: Selectable up to 3A max.
STEP: Full & 1/2-1/8-1/16 Microstep
 Full bridge driver for 4 or 6 wire hybrid
 steppermotors. Automatic drop to Hold current with no step Input.
 Switch Selectable output current. .3A-3A Over temperature
 & current Protected. Under Voltage Shutdown Opto isolated
 Step, Direction & Enable Inputs. (+5V Level) Terminal strips in/
 out. Power and Run LEDs 4Corner Mtg. Holes.
L: 3" (76cm) **W:** 2" (51cm) **H:** 1-31/2" (38cm) **WT:** .2

STOCK #	DESC.	TEA
31306-MS	Stepmotor Driver, 3A TB6560	\$14.95

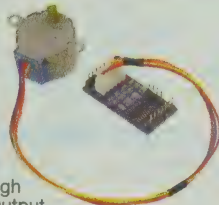
MINI POWER DRIVER



Mini ULN2003 Power Driver Board
 Mini 4 channel version of our popular
 ULN2003 stepper motor driver. Has
 4 TTL logic inputs and 4 high current
 Outputs. Each output line has a LED
 activation indicator. Uses include; Stepmotor phase drive, DC
 Motor, relay, solenoid, lamp, drivers; anytime you need to control
 higher current/voltage than your micro can handle.
 Power: 5-12VDC
 Drive Current: 150mA typ./300mA/Peak 500mA
 Depends on Duty Cycle & # of drivers activated
 Signal: TTL logic
 6 Pin .1in. Pitch Header for Input & Power
 5 Pin .1in. Pitch Header for Output
L: 7/8" **W:** 5/8" **H:** 1/2" **WT:** .01

STOCK #	DESC.	TEA
31593-MP	4 Channel Mini Power Driver	\$1.95

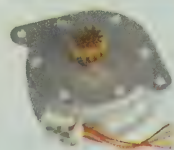
MINI STEPPER & DRIVER



Designed for Micro-controllers
 Combination of driver board & a
 small NEMA 11 gearhead Step-
 motor.
 Driver Board utilizes the ULN 2003
 IC. (www.ti.com) containing 7 high
 current drivers all brought out to a Output
 header. Outputs 1-4 are also connected
 to the motor header & Has four LED activation indicators on
 outputs (A - D) for motor phase.
 Motor: P/N 28BYJ-48
 Coil: Unipolar/5 Lead, 200 ohm
 Step: .0879deg/step (5.625 Deg/step , 1/64 ratio)
 Rate: 500pps max
 Hold Torque: >350g-cm
 20mm long X 28mm Dia. with 5mm dia. double "D" X 9mm
 brass shaft. 8" motor leads, 2 mounting ears
 Board: All Outputs available on additional header. Header for
 selecting internal/external Motor power.
 Power: 5-12VDC
 Drive Current: 300mA/Peak 500mA
 Signal: TTL logic
 7 Pin .1in. Pitch Headers for Input & Output
 5 Pin XH-5P socket for connection to Motor
 4 Pin .1in. Pitch Header for Power
 Freeware available at arduino.cc.en and others
L: 1-5/8" O/A **W:** 7/8" **H:** 1/2" **WT:** .09

STOCK #	DESC.	TEA
31592-MS	Step Motor with Driver	\$4.95

24V 7.5 DEG. STEP MOTOR



MFG: NMB
P/N: PM55L-048
COIL: 24V/30 Ohm
TYPE: 2 Phase Uni-Polar 5 lead
 7.5 Degree step angle. 500PPS, Max rate. 4mm dia. X 10mm
 steel shaft with 11 tooth, 14mm dia X 7mm , brass gear. 2
 mounting ears. 2" leads.
W: 3" (Max Body) **T:** 1" **WT:** .55

STOCK #	DESC.	TEA
18368-MS	24V NMB PM55 Step Motor	\$3.95

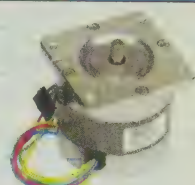
24V/3.6 DEG. STEPMOTOR



MFG: HOWARD
P/N: 1-19-4201
COIL : 24V/.16A/140ohm/68mH
TYPE: 2 Phase Bi-Polar 5 lead
STEP ANGLE: 3.6 deg
 600gm/cm holding torque. 3/16" dia. X 7/16" shaft. 2 corner
 mounting studs. 7" leads.
SQ: 1-5/8" **L:** 1-1/2" (Body) **WT:** .52

STOCK #	DESC.	TEA
18885-MS	3.6deg. 24V Stepmotor	\$6.95

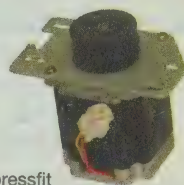
1.8 DEG. STEP MOTOR



MFG: MINEBEA
P/N: 23LM-K329-06
NEMA: 23
COIL: 2.7A/ 1.8A/1.5ohm
TYPE: 2 Phase Bi-Polar 4 lead
 1/4in. dia. X 3/8in. serrated steel shaft. 4 threaded mounting
 holes. 10" leads.
SQ: 2-1/4" **L:** 2-1/8" **WT:** 1.1

STOCK #	DESC.	TEA
30460-MS	Minebea 1.8 deg. Step Motor	\$7.95

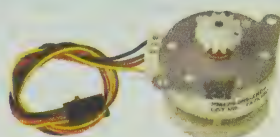
3V/ 1.8Deg. STEP MOTOR



MFG: SHINANO KENSHI
P/N: STP-58D4002-03
COIL: 3VDC/ 42ohms
TYPE: 2 Phase Bi-Polar 4 lead
STEP ANGLE: 1.8 deg
 7mm dia. X 18mm steel shaft with a pressfit
 1-1/2" dia. 36 tooth, sintered steel cog belt
 gear. Ball bearings, 3" leads, 4 corner mounting holes threaded
 M4.5, Removable steel mtg. bracket.
SQ: 2-3/16" **L:** 2-5/8"(Body) **WT:** 2.2

STOCK #	DESC.	TEA	STOCK #	DESC.	TEA
17153-MS	3V SKC Step Motor	\$14.95	17153-MS	3V SKC Step Motor	\$12.95

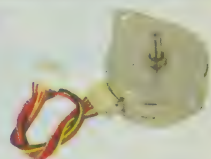
3.75DEG. STEP MOTOR



MFG: NMB
P/N: PM42S-096-XRD9
COIL: 12V/5ohm/5mH
TYPE: Bi-Polar 4 lead
STEP ANGLE: 3.75 deg
Specifications/Features: Custom pancake step motor with a
 Dual 3mm dia. X 12mm steel shaft with a press fit 16mm dia.
 14 tooth, plastic gear on front and a 39mmDia. plastic wheel on
 back shaft. 2 mounting holes. 8" leads to .1" pitch header socket
L: 9/16" (Body) 1-5/8" O/A **W:** 2-1/4" O/A **WT:** .2

STOCK #	DESC.	TEA
31393-MS	NMB PM42S Step Motor	\$1.95

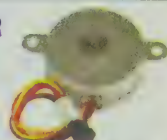
7.5DEG. STEP MOTOR



MFG: NPM
P/N: PFC55-48I4-02
COIL: 6.6ohm
TYPE: 2 Phase Uni-Polar 6 lead
 USED, pancake stepmotor.
 1/4in. dia. X 5/8in. steel shaft.
 2 mounting ears. 8in. removable leads.
Dia: 55mm(Body) 80 O/A **T:** 24.7mm **WT:** .52

STOCK #	DESC.	TEA
30239-MS	7.5 Deg. Nippon Step Motor	\$2.95

7.5DEG. STEP MOTOR



MFG: NPM
P/N: PFC35T-48134
COIL: 3V/2.2ohm
TYPE: 2 Phase Uni-Polar 6 lead
 USED, pancake stepmotor
 3mm dia. X 10mm serrated steel shaft. 2 mounting ears. 3" leads.
Dia: 35mm(Body) 50 O/A **T:** 17mm **WT:** .14

STOCK #	DESC.	TEA
30231-MS	7.5 Deg. Nippon Step Motor	\$2.95

1.8 Deg. STEP MOTOR

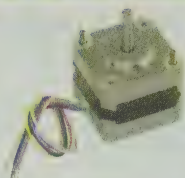
MFG: AIRPAX
P/N: 4SQ-120BA34SL

NEMA: 17
COIL: 12V/.16A/75 ohm/67mH
TYPE: 2 Phase Bi-Polar 6 lead

STEP ANGLE: 1.8 deg
Motor with a 5mm dia. X 7/8" steel shaft. Ball bearings, 5" leads and 2 M3-.5 mm corner mounting studs.

SQ: 1-5/8" L: 1-3/8"(Body) WT: .44

STOCK #	DESC.	1EA
19447-MS	12V Airpax NEMA17 Step Motor	\$9.50



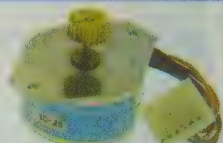
24V 15 DEG. STEP MOTOR

MFG: FUJI
P/N: SMR40-4822C
COIL: 24V/12 Ohm

TYPE: 2 Phase Uni-Polar 6 lead.
15 Deg. Pancake Stepper. 3mm dia. X 14mm steel shaft with 24 tooth, 14.6mm dia X 6.3mm, brass gear. 2 mounting ears. 4" leads.

W: 2-5/16" (Max Body) T: 1" WT: .3

STOCK #	DESC.	1EA
32449-MS	15deg. 24V Fuji Step Motor	\$3.95



.1DEG. GEARHEAD STEP MOTOR

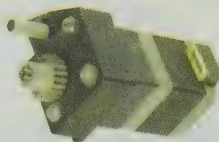
MFG: ORIENTAL MOTOR
P/N: PK223PA-SG18

NEMA: 11
COIL: 2.66V/2.8 ohm
TYPE: 2 Phase Uni-Polar 6 lead
STEP ANGLE: .1deg/Step

USED VEXTA Motor, 5mm dia. X 16mm steel shaft with removable aluminum 20 tooth 11/16" dia. gear. 4 corner m2.5x8mm mounting holes. **Sorry NO Mating 6 pin molex connector (51065-0600 & 50212-8100 Pin)**

SQ: 1-1/16" L: 2-7/16" (Body) WT: .2

STOCK #	DESC.	1EA
31129-MS	.1Deg. Gearhead Step Motor	\$9.95



24V/3.6 DEG. STEPMOTOR

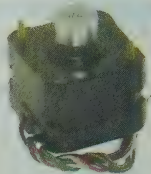
MFG: HOWARD
P/N: 1-19-4201

COIL: 24V/.16A/140ohm/68mH
TYPE: 2 Phase Bi-Polar 5 lead
STEP ANGLE: 3.6 deg

600gm/cm holding torque. 3/16" dia. X 7/16" shaft with a smooth 11/16" dia. aluminum hub. 2 corner mounting studs. 7" leads.

SQ: 1-5/8" L: 1-1/2" (Body) WT: .6

STOCK #	DESC.	1EA
24318-MS	3.6deg. 24V Howard Stepmotor	\$4.95



GEARHEAD STEP MOTOR

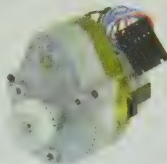
MFG: CROUZET
P/N: 82919004

COIL: 56VDC/648ohm/5W
TYPE: 2 Phase Uni-Polar 4 lead

7.5 Degree stepmotor driving a 1440/1 gearhead, 6mm dia. X 10mm flattened steel shaft. Removable 7/8" dia, 20 tooth plastic gear. 3 M3 mounting holes. 4" leads.

L: 2-9/16" (Body) W: 2-1/8" H: 2-1/2" WT: .5

STOCK #	DESC.	1EA
18891-MS	Crouzet Gearhead Stepmotor	\$14.95



12V NEMA 14 STEP MOTOR

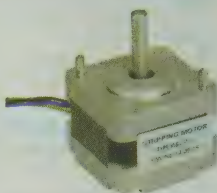
P/N: 35BH28-050B (35BYG311)

COIL: 12VDC/20 Ohms/10mH
TYPE: 4 Phase Uni-Polar 6 lead

STEP ANGLE: 1.8 deg
New step motor, 1.0kg.cm holding torque. 5mm X 19mm steel shaft. 2 corner m3-.50 X 3.5mm threaded mtg. holes & 2 m3-.50 X 5 mm threaded studs. 30" leads.

SQ: 1-1/8" L: 1-1/8"(Body) WT: .35

STOCK #	DESC.	1EA
18688-MS	12V, 1.8deg. Stepmotor	\$13.75



1.8 Deg.STEP MOTOR

MFG: MINEBEA
P/N: 23LM-K202-33V

NEMA: 23
COIL: 6VDC/3.5ohms/1.3A
TYPE: 2 Phase Uni-Polar 4 lead
STEP ANGLE: 1.8 deg

Custom motor with a flattened .25" dia. X .75" steel shaft with a 7/8 dia., 28 tooth, plastic cog belt gear attached by a set screw. Ball bearings, 6" leads, 4 corner mounting holes, removable steel mtg. bracket with shock mounts.

SQ: 2-3/16" L: 1-5/8"(Body) WT: 1.1

STOCK #	DESC.	1EA
18857-MS	6V Minebea Step Motor	\$9.95



12V NEMA 14 STEP MOTOR

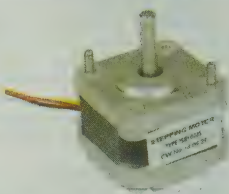
P/N: 35BH28-050A (35BYG305)

COIL: 12VDC/20 Ohms/20mH
TYPE: 2 Phase Bi-Polar 4 lead

STEP ANGLE: 1.8 deg
New step motor, 1.2kg.cm holding torque. 5mm X 19mm steel shaft. 2 corner m3-.50 X 3.5mm threaded mtg. holes & 2 m3-.50 X 5 mm threaded studs. 30" leads.

SQ: 1-3/8" L: 1-1/8"(Body) WT: .3

STOCK #	DESC.	1EA
18689-MS	12V, 1.8deg. Stepmotor	\$13.75



3.84V STEPMOTOR

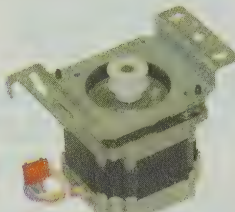
MFG: SHINANO KENSHI
P/N: STP-57D211

COIL: 3.84VDC/4.7 ohms/.8A
TYPE: 2 Phase Uni-Polar 5 lead
STEP ANGLE: 1.8 deg (Motor)

6.5mm dia. X 18mm steel shaft with a 3/4" dia., 16 tooth, plastic cog belt gear attached by a steel roll pin. Ball bearings, 3" leads, 4 corner mounting holes, Removable anti vibration rubber/steel mtg. bracket. 4" leads.

SQ: 2-3/16" L: 2" Body WT: 1.5

STOCK #	DESC.	1EA
17607-MS	3.84VDC Kenshi Stepmotor	\$9.95



1.8 Deg. 9V STEP MOTOR

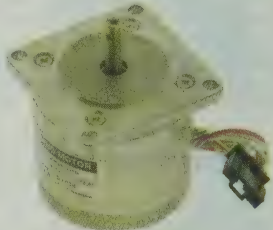
MFG: JAPAN SERVO
P/N: KP56KM2-018

NEMA: 23
COIL: 9V/0.6A/15ohm

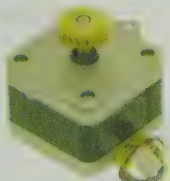
TYPE: 2 Phase Bi-Polar 4 lead
STEP ANGLE: 1.8 deg
Custom motor with a 1/4" dia. X 3/4" steel shaft. Ball bearings. 6in. leads with 4Pin Connector

SQ: 2-3/16" L: 2-1/16"(Body) WT: 1

STOCK #	DESC.	1EA
32493-MS	Japan Servo Step 9.0V Motor	\$12.95



3.75DEG. STEP MOTOR



MFG: MINEBEA
P/N: 17PU-H022-G1ST
NEMA: 17
COIL: 3.5V/.9A/3.9ohm/5mH
TYPE: 2 Phase Bi-Polar 4 lead
STEP ANGLE: 3.75 deg
Custom motor with a 5mm dia. X 5/8" steel shaft with a 3/4" dia, 21 tooth Brass gear. Ball bearings, 3" leads and a 2 hole steel mounting bracket.
A=Red A=Yellow B=Blue B=Orange
L: 1-1/4"(Body) **W:** 2-3/16" O/A **WT:** .64

STOCK #	DESC.	1EA
32101-MS	3.75Deg. NEMA17 Step Motor	\$5.95

STEPMOTOR & GEAR ASSEMBLY

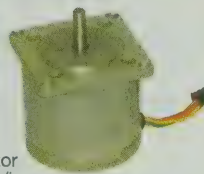


MFG: SHINANO KENSHI
P/N: STP-57D505
COIL: 5.3VDC/1A
TYPE: 2 Phase Uni-Polar 5 lead
STEP ANGLE: 1.8 deg (Motor)
Assembly#: 127K18074
Step motor & gear assembly for copy machine. Motor has 7mm steel shaft with a pressed on aluminum spur gear. Removable gear unit contains 5 various plastic gears, 2 have mechanical unidirectional clutch. 5in.

Motor: L: 3" Sq: 2-1/4" **WT:** 2.3
Assembly: L: 4-3/4" W: 5-1/4" H: 2-7/8" **WT:** 2.9

STOCK #	DESC.	1EA
17461-MS	Kenshi Stepmotor Assembly	\$14.95

1.8 DEG. STEP MOTOR



MFG: SANYO DENKI
P/N: 103-771-18
COIL : 24V/.18A
TYPE: Uni-Polar 5 lead
STEP ANGLE: 1.8 deg
Specifications/Features: Used motor with a 1/4" dia. X 3/4" steel shaft. 50oz/in Holding torque, 30oz/in. running depending on drive. 4 corner mounting holes . 7"
SQ: 2-3/16" **L:** 2" (Body) **WT:** 1.2

STOCK #	DESC.	1EA	10EA
15837-MS	24VDC Step Motor	\$8.95	\$7.95

LEADSCREW MICRO STEP MOTOR

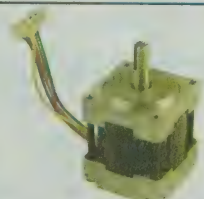


COIL: 5V/30ohm/150ma
TYPE: 2 Phase Bi-Polar 4 lead
Step Angle: 18deg.
Micro step motor designed for digital cameras. 18mm long X1.7mm Dia, single start ultra fine lead screw Includes plastic traveler nut.

L: 23MM O/A **W:** 14mm (Bracket) Dia: 7mm (Body) **WT:** .004

STOCK #	DESC.	1EA
32378-MS	Leadscrew Micro Step Motor	\$1.95

.72 Deg. STEP MOTOR

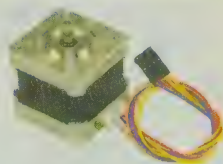


MFG: VEXTA
P/N: 14PM-M260-T22VS
NEMA: 11
COIL: .75A/1ohm Pentagon wound
TYPE: 5 Phase Bi-Polar 5 lead
STEP ANGLE: .72 deg
USED, Custom motor with a 5mm dia. X 9/16" slotted steel shaft. Ball bearings, 2in. leads with 5 pin Molex connector. SORRY NO MATING CONNECTOR. Four M2-.5 mm corner mounting holes.

L: 1-1/4"(Body) **SQ:** 1-1/6" **WT:** .2

STOCK #	DESC.	1EA
19379-MS	VEXTA NEMA11 Step Motor	\$14.95

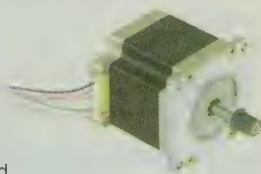
1.8 Deg. STEP MOTOR



MFG: MINEBEA
P/N: 17PM-K119-06V
NEMA: 17
COIL: 10 ohm/12mH
TYPE: 2 Phase Uni-Polar 4 lead
STEP ANGLE: 1.8 deg
Custom motor with a 4.5mm dia. X9mm serrated steel shaft. Ball bearings, 9" leads and four M3-.5 mm corner mounting holes. Leads: Blue= "B", Orange= "-B"/ Red="A", Yellow= "-A"
SQ: 1-5/8" **L:** 1-5/8"(Body) **WT:** .55

STOCK #	DESC.	1EA
19533-MS	Minebea NEMA17 Step Motor	\$9.95

3V/1.8 Deg. STEP MOTOR

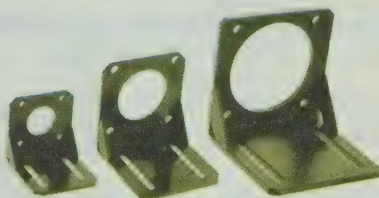


MFG: JAPAN SERVO
P/N: KH56KM2R003
NEMA: 23
COIL: 3VDC/.75ohms
TYPE: 2 Phase Bi-Polar 6 lead
STEP ANGLE: 1.8 deg
Custom motor with a Front 6mm dia. X 27mm steel shaft with a pressfit 9mmdia. 16 tooth, sintered steel cog belt gear. Stepped Rear shaft 17mm long with a flattened shaft end section is .25" long X .195" dia, 2nd step is .25" long X .238" dia. Ball bearings, 10" leads, 4 corner mounting holes.

SQ: 2-3/16" **L:** 2-1/8"(Body) **WT:** 1.5

STOCK #	DESC.	1EA
18854-MS	3V Japan Servo Motor	\$14.95

NEMA MOTOR BRACKETS



Heavy duty, gusseted steel "L" Bracket for mounting NEMA 17, 23 and 34 motors. Black finish. Four holes for motor & 2 slots for mounting the assembly.

#17 L: 2" (Motor) L: 2-1/4" (Base) W: 1-15/16" WT: .3
#23 L: 2-11/16" (Motor) L: 2-11/16" (Base) W: 2-9/16" WT: .4
#34 L: 3-7/8" (Motor) L: 3-7/8" (Base) W: 3-15/16" WT: 1.5

STOCK #	DESC.	1EA
32431-MS	NEMA 17 (Size 42) Bracket	\$4.95
32379-MS	NEMA 23 (Size 57) Bracket	\$4.95
32432-MS	NEMA 34(Size 86) Bracket	\$8.95

SHAFT COUPLERS

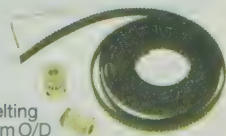


O/D: 18mm
I/D: As Listed
shaft coupling with helical cut aluminum body and dual set screws in each end.

Dia: 18mm **L:** 25mm **WT:** .04

STOCK #	DESC.	1EA
32563-HD	5mm to 8mm Coupler	\$4.95
31006-HD	6mm to 6.35mm Coupler	\$4.95
31190-HD	6.35mm to 6.35mm Coupler	\$4.95
32565-HD	6.35mm to 8mm Coupler	\$4.95

LINEAR DRIVE BELT KIT



Gear tooth belt & pulley set.
Includes:
6ft. (2M) of GT2X 6mm gear tooth belting
2pcs. GT2/16Tooth, 5mm I/D, 9.6mm O/D aluminum pulleys,
1 Hex Wrench for Set screws.

STOCK #	DESC.	1EA
32387-MI	Gear Tooth Belt Kit	\$14.95

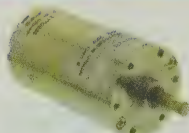
12VDC 5RPM GEAR MOTOR

MFG: ZHENGKE
P/N: ZGA37RG267I
COIL: 12V/0.16A

Gear motor rated: 5 RPM, 7.18Kg/cm Torque: 6mm dia. X 14mm steel shaft, bronze bearings. Six M3x0.5 threaded mounting holes in front. Solder terminals.

L: 2-3/4" (Body) Dia: 1-1/2" WT: .45

STOCK #	DESC.	1EA
32203-MD	12V 5RPM Zhengke Motor	\$12.95



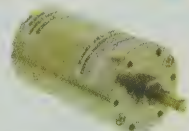
12VDC 30RPM GEAR MOTOR

MFG: ZHENGKE
P/N: ZGA37RG188
COIL: 12V/0.1A

Gear motor rated: 30 RPM, 14Kg/cm Torque: 6mm dia. X 14mm Flatted steel shaft, bronze bearings. Six M3x0.5 threaded mounting holes in front. Solder terminals.

L: 2-3/4" (Body) Dia: 1-1/2" WT: .45

STOCK #	DESC.	1EA
32204-MD	12V 30RPM Zhengke Motor	\$12.95



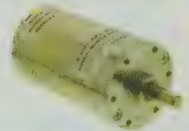
12VDC 100RPM GEAR MOTOR

MFG: ZHENGKE
P/N: ZGA37RG31.6
COIL: 12V/1.1A

Gear motor rated: 100 RPM, 4.5Kg/cm Torque: 6mm dia. X 14mm steel shaft, bronze bearings. Six M3x0.5 threaded mounting holes in front. Solder terminals.

L: 2-3/4" (Body) Dia: 1-1/2" WT: .45

STOCK #	DESC.	1EA
32206-MD	12V 100RPM Zhengke Motor	\$12.95



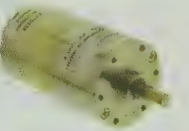
12VDC 50RPM GEAR MOTOR

MFG: ZHENGKE
P/N: ZGA37RG95I
COIL: 12V/1.1A

Gear motor rated: 50 RPM, 8.8Kg/cm Torque: 6mm dia. X 14mm steel shaft, bronze bearings. Six M3x0.5 threaded mounting holes in front. Solder terminals.

L: 2-3/4" (Body) Dia: 1-1/2" WT: .45

STOCK #	DESC.	1EA
32205-MD	12V 50RPM Zhengke Motor	\$12.95



12VDC 25RPM MINI GEAR MOTOR

MFG: ZHENGKE
P/N: ZGA17RU200I
COIL: 12V/0.11A

Gear motor rated: 25 RPM, 0.98Kg/cm Torque: 6mm dia. X 14mm steel shaft, bronze bearings. Two M2x0.4 threaded mounting holes in front. Solder terminals

L: 1-3/4" (Body) Dia: 11/16" WT: .09

STOCK #	DESC.	1EA
32208-MD	12V 25RPM Zhengke Motor	\$12.95



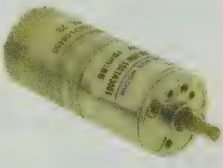
12VDC 55RPM MINI GEAR MOTOR

MFG: ZHENGKE
P/N: ZGA17RU95.8I
COIL: 12V/0.11A

Gear motor rated: 55 RPM, 0.62Kg/cm Torque: 6mm dia. X 14mm steel shaft, bronze bearings. Two M2x0.4 threaded mounting holes in front. Solder terminals

L: 1-3/4" (Body) Dia: 11/16" WT: .09

STOCK #	DESC.	1EA
32209-MD	12V 55RPM Zhengke Motor	\$12.95

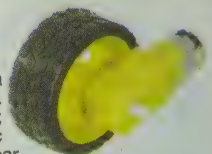


TOY MOTOR & TIRE

Reversible small DC motor with a 2.5in. Dia. X 1in. wide rubber tire. Rated: ~130RPM @ 3V/.12A No load; ~275RPM @ 6V/.15A No Load. Plastic multi stage reduction right angle gear head. Solder terminals. For toys, RC trucks & cars, robots etc.

L: 3-3/8in. W: 2-5/8in. H: 2-1/2" WT: .14

STOCK #	DESC.	1EA
32064-MD	3-6VDC Gearhead Motor & Tire	\$3.95



12VDC ACME GEAR MOTOR

P/N: 5503740 D
COIL: 12VDC

Rated: 88/178/380RPM @ 6/12/24VDC, 1.5A No Load /17A Stall @ 12V. .187 male quick connect terminals 90Deg. Angled gearhead DC motor with a 4-1/8" long 7/16"-8 Modified class 4G single start Leadscrew with a Brass custom traveler nut.

L: 5-1/2" W: 2-1/4" H: 6" WT: 1.8

STOCK #	DESC.	1EA
32575-MD	12VDC R/A Leadscrew Gear Motor	\$19.95

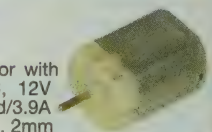


12VDC MINI MOTOR

Mabuchi FC-280PT-20150 DC motor with carbon brushes. Rated: 8-16VDC, 12V nominal. 11800 RPM, 81mA no load/3.9A Stall @ 12V, Torque @ Stall 335g/cm. 2mm dia. X 10mm serrated shaft. Insertion/Compression terminals

L: 1-3/8" (Body) Dia: 1" WT: .09

STOCK #	DESC.	1EA
18298-MD	12VDC Mabuchi Motor	\$0.99

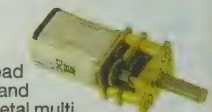


MINI GEARHEAD MOTOR

3-6VDC reversible small gear head DC motor. Rated 28 RPM @ 3VDC and 60RPM @ 6VDC 40mA no load. All metal multi stage reduction open gear head for high reliability. Flat side shaft 3mm diameter X 9mm long. Solder terminals, 2 m1.6x0.35 metric threaded mtg. holes

L: 1-3/8in. W: 15/32in. WT: .03

STOCK #	DESC.	1EA
31256-MD	3-6VDC Mini Gearhead Motor	\$7.95



MINI GEARHEAD MOTOR

3-6VDC reversible small gear head DC motor. Rated 37 RPM @ 3VDC and 74 RPM @ 6VDC 40mA no load. All metal multi stage reduction open gear head for high reliability. Flat side shaft 3mm diameter X 9mm long. Solder terminals, 2 m1.4mm threaded mtg. holes

L: 1-3/8in. W: 15/32in. WT: .03

STOCK #	DESC.	1EA
31251-MD	3-6VDC Mini Gearhead Motor	\$7.25
31254-HD	10Pcs. m1.4X.3 Mtg. Screws	\$0.99

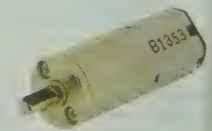


GEARHEAD INSTRUMENT MOTOR

3-6VDC reversible small gear head motor. Rated 27 RPM @ 3VDC and 66 RPM @ 6VDC 30mA no load. All metal multi stage reduction enclosed gearhead for high reliability. Flat side shaft 3mm diameter X 9mm long. Solder Terminals

L: 1-5/16in. Dia: 15/32in. WT: .03

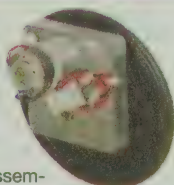
STOCK #	DESC.	1EA
31252-MD	3-6VDC Mini Instrument Motor	\$8.95
31255-HD	10Pcs. m2x.4 Mtg. Screws	\$0.99



24 VDC GEARMOTOR

MFG: MOLON
P/N: CHM-2435-1
Voltage: 24VDC
RPM: 45

360° VIEW
@MPJA.COM



USED, Reversible DC gearhead motor assembly. Mabuchi RS380SH motor driving a Molon gear head. 5/16" dia X 5/8" long steel shaft with a 4-7/8" dia. plastic wheel with "O" ring in wheel rim for use as friction drive. 45RPM/50mA @24VDC No Load; 1A/7.5in-lb torque @ Stall. 7in. leads.

L: 2-1/2" (Body) W: 2-3/4" H: 3" WT: .9

STOCK #	DESC.	1EA	10+EA
17971-MD	24VDC Gear Motor	\$9.95	\$8.95

24VDC GEARHEAD MOTOR

Heavy Duty Pittman motor and Gearhead assembly.
RPM: ~525
Motor: Pittman 9234
Coil: 24V @ <160mA No Load (>8A @ Max Torque)
Torque: 41.1oz/in Peak
Gearhead: G51A
Ratio: 5.9/1
Max. Load: 175oz/in
Shaft: 3/16in Dia X 5/8in. Long
Leads: 17" Red & Black
Mounting Holes: Front: Two 10-32, Rear: Four 6-32

L: 4" Body DIA: 2" WT: 1.1

STOCK #	DESC.	1EA
32684-MD	24VDC Pittman Gearhead Motor	\$24.95



4.5V, 140RPM GEARMOTOR

MFG: SOURCE ENG.

COIL: 4.5VDC

Gearhead DC motor rated:

4.5V= 188RPM/21A no load/3.2A Stall

4.5V=140RPM/1.1A @ .08Nm torque (12Oz/in)

6mm dia. X 15mm flattened steel shaft. 4metric (M3) threaded mounting holes. 4" leads.

L: 2-1/4" (Body) Dia: 1-15/32" WT: .36

STOCK #	DESC.	1EA
19285-MD	4.5VDC Gearhead Motor	\$10.00



12VDC/6.8RPM GEAR MOTOR

MFG: IGARASHI MOTORS (IGUSA)

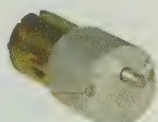
P/N: Custom 2732-0300

COIL: 12V

Gear motor rated: 6.8 RPM @ 12VDC, 5mm (3/16") dia. X 10mm (3/8"), flattened steel shaft, bronze bearings. Three M3-.5 threaded mounting holes in front. Solder terminals.

L: 2-11/16" (Body) Dia: 1-1/4" WT: .25

STOCK #	DESC.	1EA	10+EA
15870-MD	12V 6.8RPM Motor	\$12.95	\$9.95



12VDC MINI MOTOR

MAXON A-Max series Coreless

DC motor with carbon brushes.

6in. leads with micro connector.

Rated operational speed: ~7000RPM at 12V

Rated Torque: 6.9mNm Max. at 12V

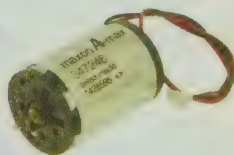
Rating at No Load: ~10200 RPM, <50mA

Stall: 2.2A @ 12V, Torque: ~20mNm.

2mm dia. X 6mm long flattened shaft.

L: 32mm (Body) Dia: 22mm WT: .12

STOCK #	DESC.	1EA
32417-MD	12VDC Maxon A-max Motor	\$12.95



36VDC GEARHEAD MOTOR

MFG: MAXON

COIL: 36VDC/60 ohm

Gearhead DC motor

Rated: 36V/6mA/150RPM no load, Stall Current

600mA, Max Torque: 0.1mNm

~100RPM/24V/5mA no load/370mA Stall

~50RPM/12V/3mA no load/185mA Stall

3mm dia. X 5mm flattened steel shaft.

3 metric (M2) threaded mounting holes. 2" leads.

L: 2-1/4" O/A DIA: 15/16" (24mm) WT: .16

STOCK #	DESC.	1EA
31474-MD	36V Maxon Gearhead Motor	\$12.95



6V INSTRUMENT GEARHEAD MOTOR

MFG: FAULHABER

P/N: 1624H0013

Voltage: 6VDC

Rated: ~66 RPM @ 6VDC/30mA No Load;

1.5A Stall.

Instrument grade gearhead motor with 2 channel, 16 Pulse/Rev. encoder. Metal & plastic multi stage gearhead. 3mm diameter X 8mm long shaft with a 10 tooth, 6mm dia. Brass gear. 2in. flat cable with a 0.1in pitch 2 X 3 header socket. Two 2-56 threaded mtg. holes.

L: 1-15/16in. Body DIA: 5/8in. WT: .08

STOCK #	DESC.	1EA
32176-MD	6VDC Gear Motor	\$34.95



MICRO VIBRATOR MOTOR

Super small coreless, DC vibrator

motor used in toys & cell phones. 3/4" leads.

Rated: 1.4-3VDC. Draws 90mA @ 1.5V; 190mA @ 3V.

L: 20mm W: 8.9mm H: 4.4mm WT: .001

STOCK #	DESC.	1EA	100+EA
32514-MD	Round Vibrator Motor	\$1.95	\$1.50



SERVO ACTUATOR

Servo Motor for Raspberry-Pi, Arduino, Models & Robotics

Heavy duty TOWERPRO MG995 mini

servo with metal gears for robotics. Rated:

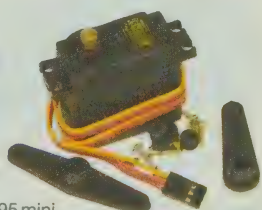
Op. Voltage 5-7.2VDC, Stall Torque: 7kg/cm @ 4.8V, 10+kg/cm

@ 6V, Speed: 360Deg/Sec (60/.15sec.), Dead Bandwidth: 5us.

12in. cable with Futaba/JR connector.

L: 2-1/8" O/A W: 3/4" O/A H: 1-1/2" WT: .14

STOCK #	DESC.	1EA
31150-MP	Tower Servo Actuator	\$7.95



MICRO SERVO ACTUATOR

Mini servo for Arduino, Raspberry-Pi, robotics & modeling.

Nylon gears for smooth

quite operation. Rated:

Op. Voltage 3.5-6VDC,

Stall Torque: 1.2kg/cm @

4.8V, 1.6kg/cm @ 6V, Speed: 300Deg./Sec (60/.12sec.), Dead

Bandwidth: 5us. Futaba/JR connector on 9in. cable.

L: 23mm W: 12mm O/A T: 29mm WT: .02

STOCK #	DESC.	1EA
31002-MD	6V Micro Servo Motor	\$5.95



FLAT VIBRATOR MOTOR

Super small coin style coreless, DC vibrator motor used in toys & cell phones. 3/4" leads to a really small connector.
Rated: 2.5-5VDC.
Draws 80mA @ 3V; 130mA @ 5V.



DIA: 10mm (Body) H: 2mm WT.: .001

STOCK #	DESC.	1EA	100-1EA
32115-MD	Flat Vibrator Motor	\$1.95	\$1.50

24VDC GEARHEAD MOTOR

USED, Faulhaber 1624-024 micro motor with a series 15 gearhead.
Rated: 24VDC 2.9mA No Load/300mA Stall
12VDC 1.8mA No Load/150mA Stall
~670 RPM @ 24VDC / ~330RPM @ 12VDC NoLoad
22:1 enclosed All metal multi stage reduction gear head for high reliability. 10mm long shaft with non-removable 11.7mm pulley for a 2mm dia. belt.
1-1/2" leads to a 0.1 pitch header socket.

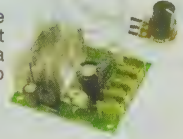


L: 2-1/8" DIA: 17mm WT.: .1

STOCK #	DESC.	1EA
33291-MD	24VDC Gearhead Micro Motor	\$6.95

DC SPEED CONTROL

Wide range control uses PWM to vary the speed of DC motors. Remote adjustment pot (included) connects to board by a 12" cable to header pins. Terminal strip for power & Motor connections.
Input: 6/12 or 24VDC
Output: 10A max. 20A Surge
Recommended: 6V/60W, 12V/120W, 24V/200W
Range: 5%-99% of rated motor RPM
Max. Frequency: 21KHz.



L: 2-3/8" W: 2" H: 1-1/8" O/A WT.: .15

STOCK #	DESC.	1EA
31566-MD	20A Motor Speed Control	\$8.95

2000W AC DIMMER/SPEED CONTROL

Improved 2KW Mini board dimmer/control using a BTA24-800B TRIAC
Connects in series with Load
Volts: 50-220VAC 50/60Hz
Max Current: 8A
Does not contain any RFI/EMI filtering

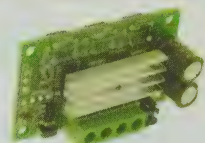


L: 2" O/A W: 1-1/4" O/A H: 1-1/4" WT.: .1

STOCK #	DESC.	1EA
32350-MI	2KW TRIAC Dimmer	\$4.95

MINI DC MOTOR SPEED CONTROL

Input: 6-28VDC
Output: 2A Max
Specifications/Features:
Compact, wide range DC speed control with memory. Uses PWM to vary the speed of DC motors while keeping torque high. Mini push buttons to raise or lower speed. On/Off Button Starts & Stops motor. Selectable memory function gives you the option for the motor to be off or start automatically when power is applied to board and an option to resume speed previously set.
Terminal strip for Power & Motor connections.
Range: ~5%-99% of rated motor RPM
Max. Frequency: 21KHz.



L: 2" W: 1-3/16" H: 3/4" WT.: .04

STOCK #	DESC.	1EA
32826-MD	DC Motor Control with Memory	\$4.95

TINY GEAR ASSORTMENT

58 pc. bag of assorted mini plastic gears. Single & double spur, crown, worm etc. 1.5-3mm shaft holes. All under 30mm dia.



WT.: .06

STOCK #	DESC.	1EA
32185-HD	Assortment of 58 Mini Gears	\$7.95

DOUBLE ACTION MINI CYLINDER



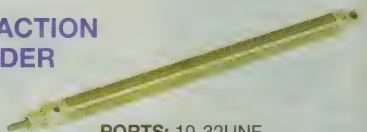
MFG: Bimba
BORE: 7/16"
Double action, 303 Stainless steel tube & Rod with aluminum heads. 250 PSI max pressure. 3/16" Dia. steel rod X 1/2" (retracted) with 10-32 UNF-2A thread. Nose mount 7/16-20 UNF-2A threaded. With Mtg. Nut.

PORTS: 10-32UNF
STROKE: 3-1/2

L: 6-3/8" O/A DIA: 3/4" WT.: .14

STOCK #	DESC.	1EA
19183-HD	Bimba 7/8" Cylinder	\$7.95

DOUBLE ACTION CYLINDER



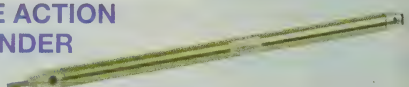
MFG: Bimba
BORE: 9/16"
Double action, 303 Stainless steel tube & Rod with aluminum heads. 250 PSI max pressure. 3/16" Dia. steel rod X 1/2" (retracted) with 10-32 UNF-2A thread. Double end or Tail pivot mount 7/16-20 UNF-2A threaded. Sorry, No Mtg. Nuts

PORTS: 10-32UNF
STROKE: 7"

L: 10-3/8" O/A DIA: 19/16" WT.: .22

STOCK #	DESC.	1EA
19184-HD	Bimba 9/16" Cylinder	\$14.95

DOUBLE ACTION CYLINDER

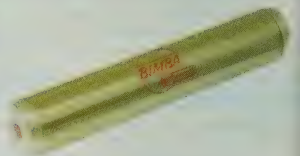


MFG: SMC NCMB075-1388-DUJ
PORTS: 1/8" NPT
BORE: 3/4"
STROKE: 13-7/8"
Double action, Stainless steel tube & Rod with aluminum heads. 250 PSI max pressure. 1/4" Dia. steel rod X 7/8" (retracted) with 1/4-28UNF thread. Nose mount 5/8"-18 threaded. Sorry, No Mtg. Nuts

L: 17" Body DIA: 7/8" WT.: .62

STOCK #	DESC.	1EA
19176-HD	SMC Pneumatic Cylinder	\$14.95

AIR RESERVOIR



MFG: Bimba
Vol: 70cu/in
PORTS: 1/4" NPT
Air reservoir with 304 Stainless steel tube and aluminum heads. 250 PSI max pressure. Port in both ends.

L: 13-7/8" O/A DIA: 2-5/8" WT.: 1.46

STOCK #	DESC.	1EA
19186-HD	Bimba Air Reservoir	\$29.95

120VAC SOLENOID VALVE

Parker FCD P/N 3M1S1P3 Normally Closed solenoid Valve compatible with: Air, Water, inert gases etc. Designed for use in a commercial coffee maker
UL/CSA/CE/ NSF listed
Rated: Coil: 120VAC 6W coil
Ports: 1/8" FPT (Female Pipe Thread)
Orifice: 1/16"
Pressure: 150PSI Max
Body: 303 Stainless body
Seals: NBR
Terminals: .250" male Quick Connect
Mounting: 2X 8-32 threaded Holes in base
Includes removable port fittings:
IN: 1/8" MPT to 1/4" male Flare brass elbow
OUT: 1/8" MPT to 1/4" compression tube fitting brass elbow



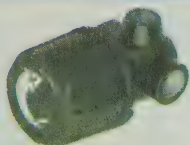
HT: 2-7/8" O/A W: 2-1/2" O/A T: 2" WT.: .5

STOCK #	DESC.	1EA
32477-HD	Parker 120VAC Solenoid Valve	\$19.95

PRESSURE REGULATOR

0-125PSI pressure regulator for air compressor. Easy grip plastic knob, 1/4-NPT In & Out Ports, 1/8" NPT Gage Port.

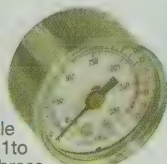
STOCK #	DESC.	1EA
18756-HD	Compressor Air Regulator	\$14.95



VACUUM & PSI GAUGE

1-5/8" Dia, Vac & Pressure gauge. Dual scale reads from 30in/Hg Vac/ to 300PS and -1to 20 atmospheres. Back side 1/8" NPT brass nipple. Black, Blue & Red legend on white background. Steel case with plastic face.

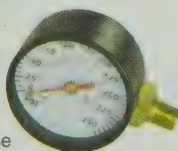
Dia: 1-5/8"	D: 1-5/8" O/A	WT: .12
STOCK #	DESC.	1EA
19298-HD	300PSI Gauge	\$2.95



250 PSI GAUGE

2" Dia, 0-250 PSI gauge with right side 1/8" NPT brass nipple. Red needle, Black legend on white background. Steel case with plastic face.

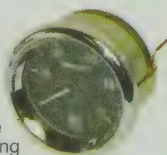
Dia: 2"	T: 1"	W: 2-7/8" O/A	WT: .18
STOCK #	DESC.	1EA	
18755-HD	250PSI Gauge	\$4.95	



OIL PRESSURE GAUGE

SUNPRO CP8061 0-100PSI lighted Oil pressure gauge. 2-1/2" Dia. with white legend & black face. 1/8" NPT Brass fitting on gauge. Includes plastic tubing & fittings for engine block & Gauge. 12V lamp with 12in. +lead. With mounting bracket.

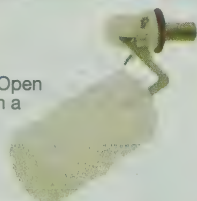
Dia: 2-5/8"	D: 2"	WT: .6
STOCK #	DESC.	1EA
19301-HD	Oil Pressure Gauge	\$14.95



TANK FILL VALVE

Side mount, thru tank wall, Normally Open float fill valve used for water service in a beverage machine. Connection Fitting is 1/4" male compression [Not Supplied] (Recommend 1/4in. universal compression nut & sleeve, for plastic tubing use nut, sleeve & Insert). Metal parts are Stainless Steel, valve seal is NBR and the float is plastic. This is not for line pressure use.

L: 5-1/2" O/A	Mtg. Hole: 1/2"	WT: .1
STOCK #	DESC.	1EA
32480-MI	Plastic Float Fill Valve	\$3.95



PARTICULATE FILTER

Plastic filter unit used to filter incoming air for dirt. Dual 1/4in. hose bib input ports & a single Brass 1/4" hose bib output port. Polyurethane foam removable filter element.

H: 6-1/4"	W: 4-5/8" O/A	WT: .52
STOCK #	DESC.	1EA
19512-HD	Particulate Filter	\$3.95



MINI LIQUID PUMP

P/N: RS360SH (Motor)

Power: ~10W

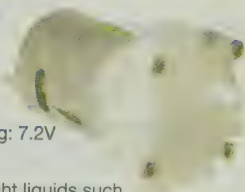
Volts: 3-12VDC Max. Operating: 7.2V

Current: 1.5A Dry @ 7.2V

Ports: 4mm Hose Bib

Small Plastic Gear pump for light liquids such as water, alcohol, non-corrosive chemicals. Used in sprayers & transfer systems. Rated: Max Head @ 12V: 1.5m, Flow: ~1.3l/min @ 6V. Max pressure: 0.8bar. Max Vacuum: 350mbar. Liquids only, no particulates (solids). Do Not Run Dry longer than 30sec.

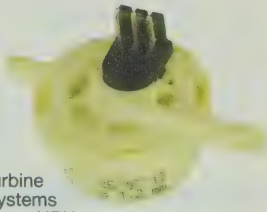
L: 3-1/2" O/A	D: 1-3/4" max O/A	WT: .16
STOCK #	DESC.	1EA
32085-MI	Mini Fluid Pump	\$4.95



FLOW SENSOR

Used DIGMESA FHKSC Turbine Flow sensor for vending systems that use vibratory water pumps. NPN Normally Open transistor switch internal 1.2K Pull-up. Output low upon detection. PBT Plastic Case, NSF/CE Approved Power: 4-20VDC Output: Square wave, 20mA max Sink, 2016 Pulse/liter Detection Range: .1-.57 L/min. Pressure Range: 14 to +4.35 PSI Internal orifice: 1.2mm Fittings: hose bib, 5mm I/D tubing Connections: Pancon156MLSS header Pins (.156" pitch)

L: 3" O/A	W: 1-5/8" O/A	H: 1-1/2"	WT: .04
STOCK #	DESC.	1EA	
31430-HD	Diamesa Flow Sensor	\$4.95	



MINI HYDRO GENERATOR

Energy harvesting Miniature generator designed for high end showers with LED lighting in the Stall. Attached in-line between the Valves & the shower head. Many other uses in flow control. Max. Pressure: <1.75MPa (250PSI) Water Temp.: <80C Flow Range: 1.5-20l/m Max. Output: 4.5V+- .2V @ 10l/m Typ. Output 128-260mA @ ~3.5VDC (100ohm load) @ 2l/m flow Fittings: G1/2 (21.3mm) (1/2"NPTFIT)

H: 3-1/4"	L: 3-1/2"	W: 1-3/4"	WT: .32
STOCK #	DESC		1EA
31159-MI	Mini Hyrdo Generator		\$7.75



MINI PNEUMATIC PUMP

MFG: KOGE

P/N: KPM27H

Power: 12VDC nom@.3A

Ports: 0.19" hose Bib

REMOVED FROM EQUIPMENT Diaphragm, oilless air pump rated 2.0l/min. no load. Max pressure: 350mmHg. Plastic pump body. For use in coffee units, lab equipment, blood pressure monitors, sampling inst. Single hole stainless mounting bracket. 1/2in. leads.

L: 3" O/A	W: 1-1/2"	H: 1-1/8"	WT: .14
STOCK #	DESC.		1EA
18831-MI	Koge Mini Air Pump		\$4.95



SSR HEATSINK

Aluminum Heatsink for 2-7/16" X 1-3/4" rectangular package SSRs. Drilled and tapped M4-0.7 for relay mounting. Base notched for mounting sink to chassis or panel.

L: 4-15/16" W: 2-3/4" H: 2" WT: .5

STOCK #	DESC.	1EA
32434-HK	Heat Sink for Solid State Relay	\$4.95

VGA CHIPSET COOLER 12VDC

MFG: Thermaltake
P/N: A-1553-2 (OEM Version)

Voltage: 12VDC

Current: .25A

CFM: 10.6

Noise: 21db

Natural Hard Copper, finned heatsink with internal Fan. Designed to cool Tt-G4-VGA or similar graphic chipsets. Stall sensor output.

L: 3-5/8" W: 1-5/16" T: 1/2" WT: .3

STOCK #	DESC.	1EA
31838-HK	Copper VGA Cooler/Fan12V	\$3.95

LARGE HEATSINK

Heavy duty natural aluminum Flatback heatsink. 27 fins, 1.25in. tall across 2-3/4 in. Various holes and a 4in. narrow slit in base. Exceeds 400sq. in./ft surface area. For power amps, supplies, modules & controllers.

L: 5-7/8in. W: 2-3/4in H: 1-7/16in O/A WT: .9

STOCK #	DESC.	1EA
32088-HK	Large Aluminum Heatsink	\$12.95

BGA HEATSINK

MFG: Thermalloy
P/N: THM1303
Heatsink for BGA/Flatpack packages with up .7in X .7in mounting surface area.

DIA: 1-1/8in. H: 5/8in. WT: .04

STOCK #	DESC.	1EA
19016-HK	BGA Heatsink	\$0.99

MODULE HEATSINK

Undrilled, Black anodized Aluminum Heatsink for general use. Smooth, flat back for flatpacs, SMD etc. Suitable for drilling to suit your needs.

L: 2" W: 1-1/4" H: 7/8" WT: .1

STOCK #	DESC.	1EA
33098-HK	General Purpose Heat Sink	\$0.99

MINI HEATSINKS

Mini natural aluminum heatsinks for D-PAC, flatpac components. Peel-n-stick adhesive backing. Surface area: Small: ~0.6 in² Large: ~1.2in²

Small: Sq.: 8.8mm H: 5mm WT: .001

Large: Sq: 14mm H: 6mm WT: .004

STOCK #	DESC.	1EA
31972-HK	8.8 X 8.8mm Heatsink	\$0.59
31973-HK	14 X 14mm Heatsink	\$0.75

HEATSINK WITH FAN

MFG: AVC

P/N: 112C80FBL03

Natural Aluminum heatsink for CPU cooling but also ideal for Peltier modules, LEDs etc.

Thermal pad and clamps for AMD Duron/Athlon XP2100/MP1200 CPU

Socket A Motherboards.

Built-in 60mm sq. 12VDC/.1A, 14+CFM fan with stall detection, 5" leads.

L: 3-1/8" W: 2-1/2" H: 2-1/2" WT: .63

STOCK #	DESC.	1EA
17045-HK	AVC CPU Heat Sink	\$4.95

HEATSINK WITH FAN

MFG: AVC for H/P

P/N: 617755-001

Natural Aluminum heatsink for Intel CPU cooling but also usefull for Peltier modules, LEDs etc.

4 clamp screws near corners.

Built-in 80mm sq. 12VDC fan with stall detection

L: 3-1/2" W: 3-1/2" H: 2-7/8" WT: .78

STOCK #	DESC.	1EA
18710-HK	AVC/HP CPU Round Heat Sink	\$6.95

FLAT PAC HEATSINK

Undrilled, Natural Aluminum Heatsink for general use. 26 Fins, with Smooth, flat back for flatpacs, SMD etc. Suitable for drilling to suit your needs.

L: 3-15/16" W: 1-5/8" T: 5/16" WT: .1

STOCK #	DESC.	1EA
33419-HK	3-15/16" Aluminum Heatsink	\$2.79

STUD HEATSINK

MFG: WAKEFIELD

P/N: 695-1

Heatsink for DO-4 stud devices.

Hole for #8 stud.

Thermal resistance = 5.2 deg/W at 400LFM forced air.

DIA: 1-5/16in. H: 1/2in. WT: .01

STOCK #	DESC.	1EA
19015-HK	DO-4 Stud Heatsink	\$0.99

SSR HEATSINK

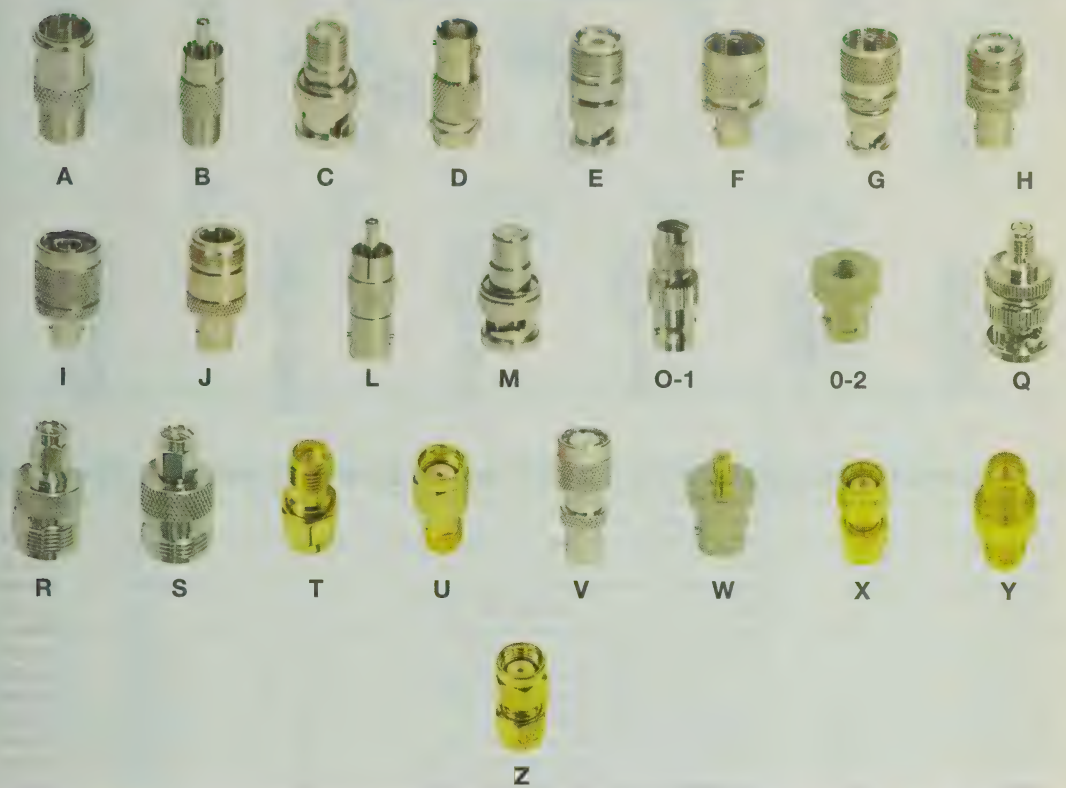
Anodized Heatsink for 2-7/16" X 1-3/4" rectangular SSRs.

Drilled and tapped M4-0.7 for relay mounting. Base notched for mounting sink to chassis or panel

L: 3-1/8" W: 1-15/16" H: 1-15/16" WT: .22

STOCK #	DESC.	1EA
32052-HK	Solid State Relay Heatsink	\$3.95

INTERSERIES ADAPTORS



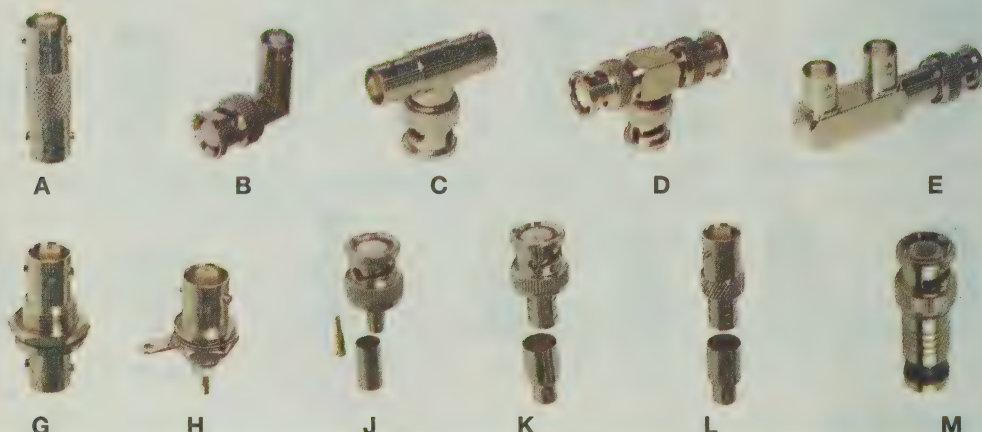
STOCK#	FIG.	DESCRIPTION	WT	1EA	10+EA
20586-RC	A	"F" Male Quick conn. "F" Female	.02	\$1.50	\$0.39
20590-RC	B	"F" Female to RCA Male	.01	\$0.75	\$0.59
20540-RC	C	"F" Female to BNC Male Adaptor	.08	\$1.30	\$0.95
20591-RC	D	"F" Male to BNC Female Adaptor	.01	\$1.50	\$1.19
20519-RC	E	BNC Male to UHF Female UG255	.05	\$2.50	\$1.95
20518-RC	F	BNC Female to UHF Male UG273	.05	\$1.95	\$1.65
27296-RC	G	BNC Male to UHF Male	.01	\$4.95	\$4.65
27297-RC	H	BNC Female to UHF Female	.01	\$2.95	\$2.75
20521-RC	I	BNC Female to "N" Male UG201	.77	\$2.50	\$1.95
20574-RC	J	BNC Female to "N" Female	.06	\$4.95	\$4.75
20548-RC	L	BNC Female to RCA Male	.02	\$1.30	\$0.95
20549-RC	M	BNC Male to RCA Female	.02	\$1.25	\$0.95
11843-RC	O-1	SMA Male-BNC Female	.02	\$2.79	\$2.59
31292-RC	O-2	SMA Male to BNC Female	.01	\$3.95	\$3.75
11845-RC	Q	SMA Female-BNC Male	.02	\$2.95	\$2.59
11846-RC	R	SMA Male-UHF Female	.02	\$2.99	\$2.65
11849-RC	S	SMA Male- "N" Female	.02	\$2.99	\$2.65
30146-RC	T	SMA Male-Reverse Polarity Female	.02	\$2.49	\$2.25
30147-RC	U	SMA Female-Reverse Polarity Male	.02	\$2.49	\$2.25
20578-RC	V	TNC male to BNC Female	.04	\$2.50	\$1.95
31293-RC	W	MCX Male to BNC Female	.02	\$4.95	\$4.75
31963-RC	X	SMA Std. Male- Reverse Polarity Male	.01	\$2.49	\$2.19
31964-RC	Y	SMA Std. Female - Reverse Polarity Female	.01	\$2.49	\$2.19
31212-RC	Z	SMA R/P Male-SMA R/P Male Coupler	.01	\$2.49	\$2.19

UHF CONNECTORS



STOCK #	FIG	TYPE	RG CABLE/DESCRIPTION	WT.	1EA	25+EA
20504-RC	A	M-359	UHF "Elbow" 1 Female-1 Male	.1	\$2.00	\$1.79
20501-RC	B	SO-239	UHF Female 4 Hole Panel Mount	.1	\$1.75	\$1.60

BNC CONNECTORS



STOCK#	FIG.	DESCRIPTION	WT	1EA	25+EA
20508-RC	A	BNC Coupler 2 Female	.1	\$0.99	\$0.89
20510-RC	B	BNC "Elbow" UG306	.1	\$2.50	\$1.95
20511-RC	C	BNC "T" 2 Female & 1 Male	.1	\$2.25	\$1.99
25437-RC	D	BNC "T" 3 Male Connectors	.1	\$4.95	\$4.49
26518-RC	E	BNC LAN "T" 2 Female & 1 Male	.1	\$4.39	\$4.59
20557-RC	G	BNC Bulkhead 2 Female Not Iso. UG492	.1	\$2.95	\$2.59
20507-RC	H	BNC Female Panel Mount UG1094	.1	\$1.00	\$0.89
25401-RC	J	3 Piece Crimp BNC Male for RG58	.02	\$1.25	\$0.99
25402-RC	J	3 Piece Crimp BNC Male for Teflon RG58	.02	\$1.25	\$0.99
25403-RC	J	3 Piece Crimp BNC Male for RG6,59	.02	\$1.25	\$0.99
25426-RC	K	2 Piece Crimp BNC Male for RG58	.02	\$1.20	\$0.99
23999-RC	L	2 Piece Crimp BNC Female for RG58	.02	\$1.25	\$0.99
19263-RC	M	Compression type BNC Male for RG58	.02	\$0.69	\$0.79
19264-RC	M	Compression type BNC Male for RG59	.02	\$0.69	\$0.79
19265-RC	M	Compression type BNC Male for RG6	.02	\$0.89	\$0.79

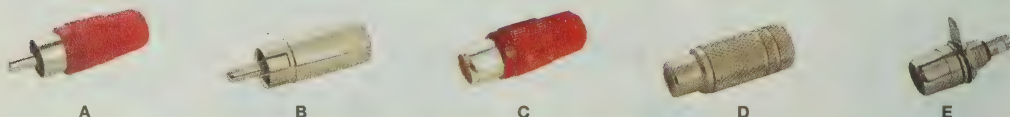
"F" TYPE CONNECTORS



Type "F" connectors are used to match Antenna & Cable TV equipment to Audio/Visual Jacks on VCRs. Monitors, Switchers etc.

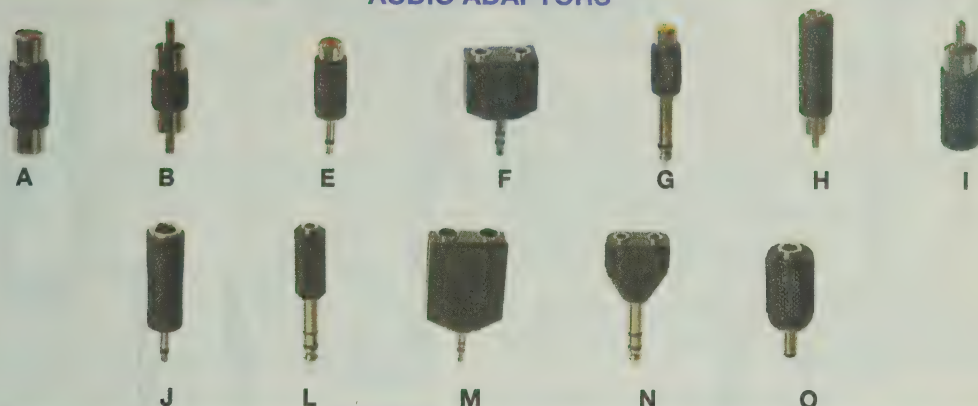
STOCK#	FIG.	TYPE	CABLE	DESCRIPTION	WT	1EA	10+EA
29231-RC	A	F-59	6U	Male Cable Separate 1/4 Ring	.01	\$0.17	\$0.16
29232-RC	A	F-59	59U	Male Cable Separate 1/4 Ring	.01	\$0.17	\$0.16
25451-RC	B	F-56T	6U	Male Cable Twist-on	.01	\$0.35	\$0.29
20563-RC	B	F-59T	59U	Male Cable Twist-on	.01	\$0.35	\$0.29
25454-RC	C	F-71		Male to Male In-line	.01	\$0.69	\$0.55
20541-RC	D	F-81		Female to Female Bulkhead with Nut	.01	\$0.49	\$0.39
27097-RC	E			Male to Female Right Angle Adaptor	.01	\$0.75	\$0.59
11448-RC	F			Male to RCA Jack	.01	\$1.30	\$1.19
25456-RC	G			Male 75ohm Terminator 1/2W	.01	\$0.33	\$0.29

RCA CONNECTORS



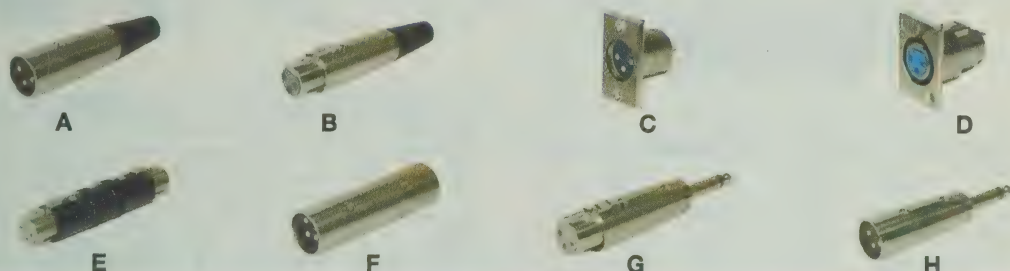
STOCK#	FIG.	TYPE	DESCRIPTION	WT	1EA	10+EA	100+EA
24674-PL	A	Plug	Red Plastic Backshell	.004	\$0.19	\$0.16	\$0.13
24675-PL	A	Plug	Black Plastic Backshell	.004	\$0.19	\$0.16	\$0.13
25518-PL	B	Plug	Metal Backshell	.004	\$0.57	\$0.47	\$0.38
25519-PL	C	Jack	Red Plastic Backshell	.004	\$0.23	\$0.19	\$0.15
25521-PL	D	Jack	Metal Backshell	.004	\$0.76	\$0.63	\$0.51
25522-PL	E	Jack	Panel Mount Black Insulator	.004	\$0.41	\$0.34	\$0.27
33145-PL	E	Jack	Panel Mount Red Insulator	.004	\$0.41	\$0.34	\$0.27

AUDIO ADAPTORS



STOCK#	FIG.	DESCRIPTION	WT	1EA	10+EA
11295-AD	A	RCA Jack to RCA Jack	.01	\$0.45	\$0.36
11296-AD	B	RCA Plug to RCA Plug	.01	\$0.49	\$0.39
11299-AD	E	RCA Jack to 3.5mm Mono Plug	.01	\$0.95	\$0.79
11300-AD	F	2X 3.5mm Stereo Jack to 3.5mm Stereo Plug	.01	\$1.25	\$0.99
11301-AD	G	RCA Jack to 1/4" Mono Plug	.01	\$0.75	\$0.59
11302-AD	H	1/4" Mono Jack to RCA Plug	.01	\$0.95	\$0.79
11303-AD	I	3.5mm Mono Jack to RCA Plug	.01	\$0.95	\$0.79
11304-AD	J	1/4" Mono Jack to 3.5mm Mono Plug	.01	\$0.75	\$0.59
11305-AD	J	1/4" Stereo Jack to 3.5mm Stereo Plug	.01	\$0.95	\$0.79
11306-AD	L	3.5mm Mono Jack to 1/4" Mono Plug	.01	\$0.75	\$0.59
11307-AD	L	3.5mm Stereo Jack to 1/4" Stereo Plug	.01	\$0.75	\$0.59
11308-AD	M	2X 1/4" Stereo Jack to 3.5mm Stereo Plug	.01	\$1.75	\$1.39
11309-AD	N	2X 3.5mm Stereo Jack to 1/4" Stereo Plug	.01	\$1.50	\$1.19
11400-AD	O	3.5mm Mono to 3.5/1.3mm ID Coaxial Plug	.01	\$1.50	\$1.25

3 PIN XLR MIKE CONNECTORS



STOCK#	FIG.	DESCRIPTION	WT	1EA	10+EA
22983-PL	A	XLR Cable Male Mike Connector	.2	\$2.49	\$2.25
22971-PL	B	XLR Cable Female Mike Connector	.2	\$2.49	\$2.25
22972-PL	C	XLR Male Chassis Mike Connector	.2	\$2.25	\$1.79
23136-PL	D	XLR Female Chassis Mike Connector	.2	\$3.95	\$2.95
11403-PL	E	XLR Female to Female Inline Conn.	.15	\$4.45	\$3.59
11404-PL	F	XLR Male to Male Inline Conn.	.13	\$4.25	\$3.39
11405-PL	G	XLR Female to 1/4" Mono Plug	.1	\$4.25	\$3.39
11406-PL	H	XLR Male to 1/4" Mono Plug	.1	\$3.95	\$2.95

MINI XLR MIKE CONNECTORS

Multi-Pin, locking (threaded)
6mm XLR cable & chassis pair.
Zinc Alloy body, Solder cup terminals.
Front Panel Mount "D" hole.
Max Current@ 125V: 2 & 5 Pin: 5A, 8Pin: 4A
Max Voltage: 200VAC
SOLD AS A PAIR: Female Cable/Male Panel

Mtg. Hole 15.5mm Panel Male

WT: .04

STOCK #	DESC.	1EA
22420-PL	2 Pin XLR Connector Pair	\$1.05
22423-PL	5 Pin XLR Connector Pair	\$1.95
22426-PL	8 Pin XLR Connector Pair	\$1.95

LOCKING CONNECTORS

Multi-Pin, Miniature Quick Connect (Snap lock) 10mm
Aviation cable & chassis connectors. Aluminum Alloy body, Gold plated solder cup terminals. Panel Mount male with sealing gasket. Female cable with strain relief.
Max Current@ 125V: 3A Max Voltage: 250V
SOLD AS A PAIR: Female Cable/Male Panel

Mtg. Hole: 10mm for Panel Male

WT: .04

STOCK #	DESC.	1EA
32568-PL	3 Pin Latching Connector Pair	\$2.89
32570-PL	5 Pin Latching Connector Pair	\$2.89

AUDIO ADAPTOR & SPLITTER CABLES



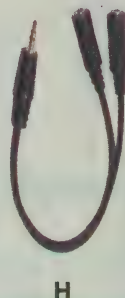
A



E



C



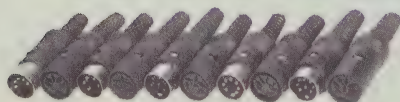
H



D

STOCK #	FIG.	DESCRIPTION	WT	1EA	10+EA
11420-AC	A	Black RCA Plug to Red/White RCA Jack (Y)	.05	\$0.89	\$0.69
11422-AC	C	Black RCA Jack to Red/White RCA Plug (Y)	.05	\$0.89	\$0.69
11423-AC	D	3.5mm St. Plug to Red/White RCA Plug (Split)	.05	\$0.85	\$0.79
11424-AC	E	3.5mm St. Plug to Red/White RCA Jack (Split)	.05	\$0.95	\$0.79
11427-AC	H	3.5mm St. Plug to 3.5mm St. Jacks (Y)	.05	\$0.95	\$0.79

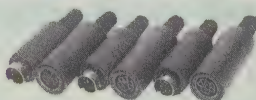
STANDARD DIN CABLE CONNECTORS



WT: .02

STOCK #	TYPE	DESC.	1EA	10EA	100+EA
25607-PL	Male	5 Pin 45°	\$0.42	\$0.35	\$0.28
25611-PL	Male	6 Pin	\$0.48	\$0.40	\$0.32
25612-PL	Female	6 Pin	\$0.72	\$0.60	\$0.48
25614-PL	Female	7 Pin	\$0.81	\$0.68	\$0.54
25615-PL	Male	8 Pin	\$0.56	\$0.46	\$0.37

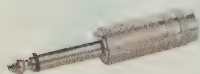
MINI DIN CABLE CONNECTORS



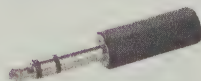
WT: .02

STOCK #	TYPE	DESC.	1EA	10EA	100+EA
25601-PL	Male	4 Pin	\$0.87	\$0.73	\$0.58
25603-PL	Male	6 Pin	\$1.05	\$0.88	\$0.70
25605-PL	Male	8 Pin	\$1.45	\$1.21	\$0.97

1/4" PHONE PLUGS



A

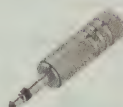


B

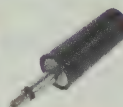
WT: .02

STOCK #	TYPE	DESC.	1EA	10EA
27236-PL	A	Mono Plug Metal Back	\$0.72	\$0.60
27237-PL	B	Mono Plug Plastic Back	\$0.48	\$0.40
27238-PL	A	Stereo Plug Metal Back	\$0.97	\$0.81
27239-PL	B	Stereo Plug Plastic Back	\$0.67	\$0.43

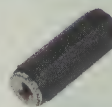
1/8" (3.5MM) PHONE PLUGS & JACKS



A



B



C

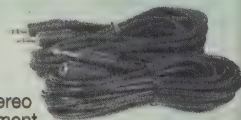


D

WT: .004

STOCK #	TYPE	DESC.	1EA	10EA
22187-PL	A	Mono Plug Metal Back	\$0.52	\$0.43
21868-PL	B	Mono Plug Plastic Back	\$0.15	\$0.13
25514-PL	A	Stereo Plug Metal Back	\$0.64	\$0.53
24015-PL	B	Stereo Plug Plastic Back	\$0.37	\$0.31
21927-PL	C	Mono Jack Plastic Back	\$0.50	\$0.46
25515-PL	D	Stereo Enc. Panel Jack	\$0.38	\$0.32
33153-PL	D	Mono Bridging Panel Jack	\$0.38	\$0.32

1/8" PHONE STEREO CABLES



Single cable with 3.5mm (1/8") stereo cables. For audio or video equipment patching. Black cable with molded connectors. M = Male, F = Female.

WT: .12

STOCK #	DESC.	1EA	10EA
11291-CB	12ft. 3.5mm M/F Cable	\$1.69	\$1.49
11292-CB	12ft. 3.5mm M/M Cable	\$1.69	\$1.49
11293-CB	6ft. 3.5mm M/M Cable	\$1.65	\$1.49

PREMIUM RGB CABLE



6ft. Premium Component Video (RGB) cable. 3 Siamese video cables with OFC conductors, 95% Copper braid & 100% aluminum foil double shielding. 24kt gold plated Red, Blue & Green coded RCA Plugs with molded strain relief.

L: 6ft.

WT: .8

STOCK #	DESC.	1EA
19560-CB	6ft. Prem. RGB Cable	\$3.95

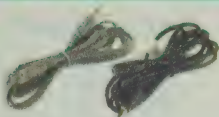
1/8" PHONE AUDIO CABLE

Audio patch cables with 1/8" stereo phone plug connectors on both ends. Molded strain reliefs.

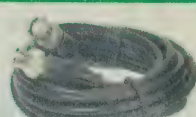
A: 6ft. Gray Gasket ZIP Cord, Gold Plated Connectors
B: 6ft. Black Jacket, Round Cable

L: 6ft. WT: .1

STOCK #	TYPE	DESC.	1EA	10EA
31134-CB	(A)	Gray Jacket	\$1.25	\$9.99
31133-CB	(B)	Black Jacket	\$1.25	\$9.99



RG-58 CABLES WITH BNC CONN.



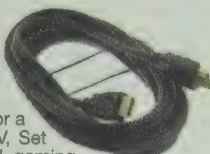
Cable with BNC Male connectors on both ends. Black with molded strain relief.

STOCK #	DESC.	WT.	1EA	10EA
28011-CB	10ft 50ohm RG-58	1	\$3.95	\$3.49
28012-CB	25ft 50ohm RG-58	1	\$4.95	\$4.49
28013-CB	50ft 50ohm RG-58	1.5	\$8.95	\$7.49
28014-CB	100ft 50ohm RG-58	5	\$15.95	\$14.95

HDMI CABLES

HDMI Version 1.4 cable Designed for a top quality signal for all Hi-Def. TV, Set Top boxes, recorder/players and gaming consoles etc. Supports Ethernet over HDMI, 3-D formats, 2 & 4K resolution, standard, enhanced High Definition video plus standard & surround sound.

STOCK #	DESC.	WT.	1EA
32031-CB	12ft. HDMI V1.4 Cable	.4	\$8.95
32032-CB	25ft. HDMI V1.4 Cable	1.1	\$18.95
32033-CB	50ft. HDMI V1.4 Cable	2.5	\$39.95

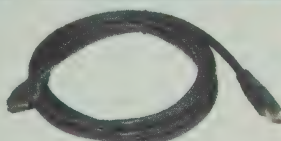


6FT HDMI CABLE

HDMI (High Definition Multimedia Interface) cable for Top quality signal for all Hi-Def. TV, Set Top cable boxes, recorder/players etc. Supports standard, enhanced, & High Definition video plus standard & surround sound.

L: 6ft. WT: .2

STOCK #	DESC.	1EA
30028-CB	HDMI TV Cable	\$5.95



6FT DVI CABLE

6 ft. with a DVI-D (18+1, Single Link-Digital cable) male connector on both ends. Gray cable with Gray molded connectors.

L: 6ft. WT: .44

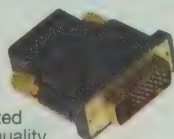
STOCK #	DESC.	1EA
16594-CB	Gray 6ft. DVI-D Cable	\$2.95



HDMI/DVI ADAPTER

HDMI/DVI Cable adapter with gold plated connectors. Top quality for the highest quality viewing.

STOCK #	DESC.	1EA	5EA
16871-PL	HDMI-M to DVI-F Adapter	\$11.95	\$9.95



HDMI ADAPTER

HDMI Male to Female Right Angle Cable adapters for all those right connections. Gold plated connectors. Top quality for the highest quality viewing.

STOCK #	DESC.	1EA
32213-PL	Right Angle HDMI-F to HDMI-M Adapter	\$2.95



RG-59 CABLE WITH BNC CONN.



Convenient lengths of black 75 ohm RG-59 CCTV cables. With strain relieved male BNC connectors on both ends. Use to interconnect Cameras, Monitors, Switchers etc.

STOCK #	DESC.	WT.	1EA	25+EA
28952-CB	3ft. RG-59 Cable	.3	\$3.25	\$2.95
28953-CB	6ft. RG-59 Cable	.6	\$3.85	\$3.49
28954-CB	12ft. RG-59 Cable	2	\$4.50	\$3.95
28955-CB	25ft. RG-59 Cable	3.1	\$8.95	\$5.49
28956-CB	50ft. RG-59 Cable	4.2	\$8.95	\$7.95
12386-CB	100ft. RG-59 Cable	8.5	\$14.95	\$12.95

CAMERA VIDEO & POWER CABLE



Siamese cable for cameras. Cable splits out 8" from ends into a video cable with a BNC male on one end and a RCA male on other and a power cable with a 2.1mm I/D coaxial power Plug on end (same end as video RCA) and a 2.5mm I/D power Jack on other. Includes a BNC Male to RCA Female adapter.

STOCK #	DESC.	WT.	1EA
15460-WI	25ft. Camera Cable	0.6	\$8.95
15461-WI	50ft. Camera Cable	1.8	\$9.95
15462-WI	100ft. Camera Cable	3.4	\$17.95
15463-WI	150ft. Camera Cable	4.9	\$22.95

VIDEO COAX TO UTP CONVERTER



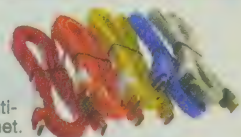
Screw terminals/BNC male connectors. 2" leads.

Isolated balun converts video signals using coaxial cable to telcom UTP cable (CAT 3-5). Sends color video up to 1200ft Bandwidth 35Hz to 4.5MHz. Transpedance: 75ohm unbalanced to 100 ohm balanced. Use existing phone wiring to send video. 1 needed at each end, Sold as Singles

L: 7-1/2" WT: .08

STOCK #	DESC.	1EA
19458-ST	Screw BNC/UTP Balun	\$2.95

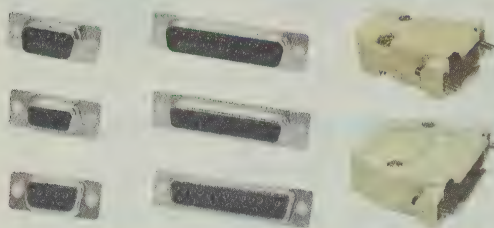
1.5M HDMI CABLES



V1.4 HDMI (High Definition Multimedia Interface) cable with Ethernet. Top quality signal for all Hi-Def. TV, Set Top cable boxes, recorder/players etc. Flat cable with gold plated connectors & triple shielding. Supports standard & High Definition video to 4096X2160P @ 24Hz, Standard & Dolby HD & DTS-HD Master format sound.

STOCK #	DESC.	1EA
32630-CB	Red 1.5M HDMI V1.4 Cable	\$3.95
32631-CB	Yellow 1.5M HDMI V1.4 Cable	\$3.95
32632-CB	Orange 1.5M HDMI V1.4 Cable	\$3.95
32633-CB	Blue 1.5M HDMI V1.4 Cable	\$3.95
32634-CB	Gray 1.5M HDMI V1.4 Cable	\$3.95

DB CONNECTORS



WT: .02

STOCK #	DESC.	1EA	25+EA
22856-PL	DB-9 Male Solder	\$0.24	\$0.19
22857-PL	DB-9 Female Solder	\$0.28	\$0.24
25395-PL	DB-15 Male Hi Den.	\$0.69	\$0.59
25394-PL	DB-15 Female Hi Den.	\$0.79	\$0.69
22859-PL	DB-9 Plastic Hood	\$0.39	\$0.35
22860-PL	DB-15 Male Solder	\$0.45	\$0.36
22861-PL	DB-15 Female Solder	\$0.45	\$0.36
20133-PL	DB-15 Hood	\$0.75	\$0.59
22444-PL	DB-25 Male Solder	\$0.39	\$0.29
22445-PL	DB-25 Female Solder	\$0.59	\$0.49
22446-PL	DB-25 Plastic Hood	\$0.39	-----
20134-PL	DB-37 Hood	\$1.00	\$0.79
26949-PL	DB-50 Male Solder	\$1.95	\$1.59
20136-PL	DB-50 Hood	\$1.25	\$0.95

RIGHT ANGLE DB CONNECTORS



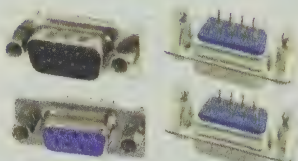
Right angle PC mount connectors. Metal face, gold plated contacts. 3/4" from face to back.

WT: .02

STOCK #	DESC.	1EA	25+EA
24840-PL	DB-9 Female 90° Mount	\$0.59	\$0.55
24896-PL	DB-9 Male 90° Mount	\$0.59	\$0.55
25687-PL	DB-15 Male 90° Mount	\$0.65	\$0.58

PC MOUNT DB-9 CONNECTORS

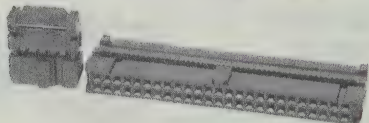
Vertical PC mount connectors. Metal face, gold plated contacts. 1/2" from face to back, 11/16" O/A.



WT: .02

STOCK #	DESC.	1EA	25+EA
31861-PL	DB-9 Male Vert. Mount	\$0.49	
31862-PL	DB-9 Female Vert. Mount	\$0.49	

IDC CONNECTORS

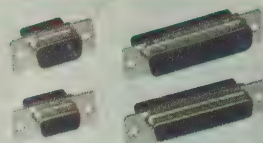


Insulation displacement header connectors for .025 square pins with .100 spacing.

WT: .03

STOCK #	DESC.	1EA	25+EA
20891-HC	10 (2X5) Socket Header	\$0.39	\$0.29
20893-HC	16 (2X8) Socket Header	\$0.68	\$0.59
22883-HC	20 (2X10) Socket Header	\$0.75	\$0.59
20895-HC	26 (2X13) Socket Header	\$0.75	\$0.59
24709-PL	34 (2X17) Socket Header	\$0.45	\$0.32
22884-HC	40 (2X20) Socket Header	\$0.49	\$0.39
24710-PL	50 (2X25) Socket Header	\$0.49	\$0.39

DB CRIMP CONNECTORS

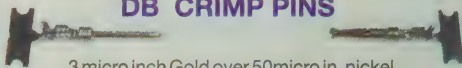


Metal face DB Housings for crimp pins (Not included)

WT: .1

STOCK #	DESC.	1EA	25+EA
16251-PL	DB-9 Male Crimp	\$0.59	\$0.49
16252-PL	DB-9 Female Crimp	\$0.59	\$0.49
16253-PL	DB-15 Male Crimp	\$0.69	\$0.59
16254-PL	DB-15 Female Crimp	\$0.69	\$0.59
16255-PL	DB-25 Male Crimp	\$0.69	\$0.59
16256-PL	DB-25 Female Crimp	\$0.69	\$0.59
16257-PL	DB-37 Male Crimp	\$1.19	\$0.99
16258-PL	DB-37 Female Crimp	\$1.19	\$0.99
16259-PL	DB-50 Male Crimp	\$2.99	\$2.79
16260-PL	DB-50 Female Crimp	\$2.99	\$2.79
16261-PL	DB-15 Male Hi Den.	\$0.79	\$0.69
16262-PL	DB-15 Female Hi Den.	\$0.79	\$0.69

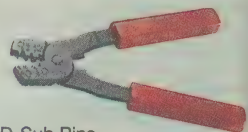
DB CRIMP PINS



3 micro inch Gold over 50micro in. nickel for 24-28AWG Wire

STOCK #	DESC.	1EA	25+EA
16265-PL	Male Crimp Pin/100	\$4.99	\$4.49
16266-PL	Female Crimp Pin/100	\$4.99	\$4.49
16269-PL	HD Male Crimp Pin/100	\$4.99	\$4.49
16270-PL	HD Female Crimp/100	\$4.99	\$4.49
16271-PL	HD Male Crimp/5KReel	\$99.00	-----
16272-PL	HD Female Crimp/5KReel	\$99.00	-----

DB CONNECTOR PIN CRIMP TOOL



Multi Purpose Crimp Tool
Features: Cushioned Grips.
Use: Crimping Open (stamped) D-Sub Pins, Terminal Lugs. For 14-26 AWG Wire.
NOTE: Will not crimp High Density DB Pins.

WT: .6

STOCK #	DESC.	1EA	10EA
11763-TL	Multi Crimp Tool	\$9.95	\$7.95

DB CRIMP PIN EXTRACTOR



Tool used to extract crimp pins from insertion type DB connectors. Double ended For Pin & Socket type connectors (16251-PL - 16262-PL)

WT: .03

STOCK #	DESC.	1EA	10EA
17124-TL	DB-Crimp Pin Extractor	\$4.75	

HEADER CONNECTORS



1 X 40 straight header connector. Plated tin over nickel, .025 square pins with .100 spacing. Cut to length.

H: 7/16" O/A

WT: .007

STOCK #	DESC.	1EA	25+EA
30100-HC	40 Pin Header Connector	\$0.29	

2X40 HEADER CONNECTORS



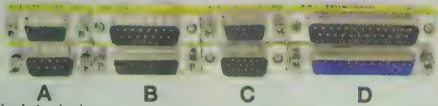
80 Pin (2X 40) straight header connector. Plated tin over nickel, .025 square pins with .100 spacing. Cut to length.

H: 7/16" O/A

WT: .009

STOCK #	DESC.	1EA	25+EA
30130-HC	2 X 40 Pin Header	\$0.49	

THIN GENDER CHANGERS



Gold plated pins.
Description is gender changer configuration.

STOCK #	FIG.	DESCRIPTION	1EA	5+EA
27006-PL	A	DB-9 Male/Male	\$1.95	\$1.65
27007-PL	A	DB-9 Female/Female	\$1.95	\$1.65
11216-PL	B	DB-15 Male/Male	\$2.95	\$2.39
11217-PL	B	DB-15 Female/Female	\$2.95	\$2.39
28036-PL	C	DB-15 Hi Den. M/M	\$3.95	\$2.49
28037-PL	C	DB-15 Hi Den. F/F	\$3.95	\$2.49
27008-PL	D	DB-25 Male/Male	\$1.95	\$1.65
27009-PL	D	DB-25 Female/Female	\$1.95	\$1.65



**USB
GENDER
CHANGERS**
Description is gender
changer configuration.

STOCK #	FIG.	DESCRIPTION	1EA	5+EA
12452-CB	A	A Female/B Female	\$3.75	\$3.25
12453-CB	B	A Male/B Female	\$3.60	\$2.95
12454-CB	C	A Female/ B Male	\$3.50	\$2.95
15476-PL	D	A Male/A Male	\$3.50	\$2.95
15477-PL	E	Male/A Female	\$3.50	\$2.95
15478-PL	F	Female/A Female	\$3.50	\$2.95
15479-PL	G	Male/B Male	\$3.50	\$2.95
15480-PL	H	Female/B Female	\$3.50	\$2.95

VGA CABLE DB-15HD M/M



Hi-Density DB-15 connectors. Gold plated pins. Black jacket, Dark Blue molded connectors Ferrite filters on both ends. Pins 4, 6-8 & 11 tied to shell.

STOCK #	DESC.	1EA
31238-CB	6ft. DB-15 M/M VGA Cable	\$2.95

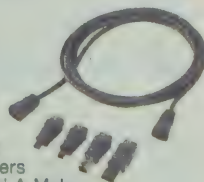
USB FEEDTHRU CONNECTOR



IP-67 rated USB 2.0 chassis mount Feedthru connector. Type A Females on both sides. Rear mounts through chassis with nut on outside along with a sealing cap. 1.5A Max, -40C to +80C temp. range. CEListed, RoHS Compliant.

STOCK #	DESC.	1+EA
32355-PL	IP67 USB Feedthru Connector	\$6.95

UNIVERSAL USB CABLE SET



USB 2.0 adapter set includes 6ft. cable with adapter plugs. Adapters are: Type A Male, Type B Male, Mini A Male & Mini B Male.

STOCK #	DESC.	1+EA
19211-CB	4in1 USB Adaptors Set	\$5.95

DB-25 DATA CABLES



Gold Plated Contacts,
All Lines Wired Through.

STOCK #	DESCRIPTION	WT.	1EA	5+EA
11451-CB	10' DB-25 Male/Female	.7	\$5.95	\$5.45
11453-CB	15' DB-25 Male/Female	.9	\$7.95	\$7.45
11457-CB	50' DB-25 M/F Cable	2.8	\$20.95	\$19.95

DB-9 EXTENSION CABLES



Gold Plated Contacts

STOCK #	DESCRIPTION	WT.	1EA	5+EA
28641-CB	6' DB-9 Male/Male	.22	\$2.95	\$2.49
28642-CB	6' DB-9 Male/Female	.22	\$2.95	\$2.75
28643-CB	10' DB-9 Male/Male	.4	\$4.95	\$4.49
28644-CB	10' DB-9 Male/Female	.4	\$3.49	\$2.95

MONITOR CABLES

Hi density DB-15 connectors.
Gold Plated Pins



STOCK #	DESCRIPTION	WT.	1EA	5+EA
28647-CB	6' Monitor Cbl. M/F	.2	\$3.95	\$3.49
28649-CB	10' Monitor Cbl. M/F	.2	\$4.95	\$4.49

2.0 USB CABLE

Platinum jacket, USB 2.0 cable with a TYPE A male on one end and a Type B Male on the other.

L: 36"



WT.:.1

STOCK #	DESC.	1EA
19384-CB	36" USB 2.0 Cable	\$0.99

USB CABLES

USB inter-connect cables



STOCK #	DESCRIPTION	WT.	1EA	5+EA
12389-CB	6ft. USB A to A M/F	.15	\$2.95	\$2.59
11161-CB	6ft. USB A to B M/M	.16	\$2.95	\$2.59
12390-CB	10ft. USB A to B M/M	.22	\$3.95	\$3.59

2 FT USB CABLE

USB 1.1 extension cable with a TYPE A Male on one end and a Type A Female on the other. Charcoal jacket with molded strain relief.

L: 2ft.



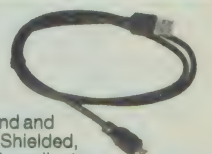
WT.:.08

STOCK #	DESC.	1+EA
18481-CB	2ft. USB Cable	\$1.29

USB MICRO B CABLE

USB cable with a Type A male on one end and a 5 pin USB Micro B Male on the other. Shielded, 28AWG data, 24AWG Power. RoHS Compliant

L: 6ft.



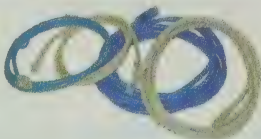
WT.:.12

STOCK #	DESC.	1+EA
32194-CB	6ft Black USB Micro B Cable	\$2.95

CAT- 5E PATCH
CABLES

Flexible, Cat-5e UTP patch cable, stranded 26AWG copper with RJ-45 (8X8) strain relieved plugs. Straight wired to T568B ATT-258A standards. Verified to EIA/TIA Cat. 5e standards. Plugs feature 50 micro inch gold plated contacts.

STOCK #	DESC.	WT.	1EA	10+EA
32310-TT	6ft. Blue Cat-5e Cable	.1	\$1.29	\$0.99
32311-TT	6ft. Yellow Cat-5e Cable	.1	\$1.29	\$0.99
32312-TT	12ft. Blue Cat-5e Cable	.22	\$1.95	\$1.75
32313-TT	12ft. Yellow Cat-5e Cable	.22	\$1.95	\$1.75

SHIELDED
CAT- 5E CABLES

Flexible, **Shielded** Cat-5e S-UTP patch cable, stranded 26AWG copper with RJ-45 (8X8) strain relieved plugs. Straight wired to T568B ATT-258A standards. Verified to EIA/TIA Cat. 5e standards. Plugs feature 50 micro inch gold plated contacts.

STOCK #	DESC.	WT.	1EA	10+EA
32314-TT	6ft. Blue Cat-5e Str. Cable	.14	\$1.75	\$1.49
32315-TT	6ft. Yell. Cat-5e Str. Cable	.14	\$1.75	\$1.49
32316-TT	12ft. Blue Cat-5e Str. Cable	.26	\$2.49	\$2.25
32317-TT	12ft. Yell. Cat-5e Str. Cable	.26	\$2.49	\$2.25

CAT- 5E CABLE



Flexible, 24AWG stranded conductor patch cables with RJ-45 (8X8) plugs. Straight wired to T568B standards. 100% tested wire sequence & continuity. Verified to EIA/TIA Cat. 5 standards. Plugs feature 50 micro inch gold plated contacts. Conforms to FCC requirements. UL/CSA Listed.

L: 2m (6' 5")

WT.:16

STOCK #	DESC.	1EA
32413-TT	2m Green Cat-5e Cable	\$0.99

110 CAT-5e
JACKS

Category 5e Keystone modular RJ-45 (8X8) jacks for Data Networks. Gold plated contacts. For 24-26AWG solid wire. Tin lated Type 110 terminations. Conforms to ATT-T568A/B.

STOCK #	DESC.	1EA	20+EA
32131-TT	Black Cat-5e 110 Jack	\$1.89	\$1.49
32132-TT	Red Cat-5e 110 Jack	\$1.89	\$1.49
32133-TT	Orange Cat-5e 110 Jack	\$1.89	\$1.49
32134-TT	Blue Cat-5e 110 Jack	\$1.89	\$1.49

KEYSTONE
WALLPLATES

White plastic wall plates fit standard duplex electrical box & hold from 1 to 4 Keystone snap-in jacks (not supplied)

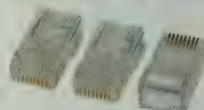
STOCK #	DESC.	1EA
32136-TT	1 Cavity Keystone Wallplate	\$0.49
32137-TT	3 Cavity Keystone Wallplate	\$0.49
32138-TT	4 Cavity Keystone Wallplate	\$0.49

ECONOMY "MOD"
CRIMP PLUGS

Cat-3 Standard crimp-on "Modular" plugs. For flat cable Available for line or handset.

WT.:001

STOCK #	DESC.	1EA	25EA	100+EA
24236-TT	6X4 RJ-11 Plug	\$0.15	\$0.10	\$0.08
24238-TT	4X4 Handset Plug	\$0.30	\$0.25	\$0.24

CAT-5 RJ-45 "MOD"
CRIMP PLUGS

"Modular" RJ-45 plugs feature .35mm phor-bronze contacts with 50 u-in. gold over 50-100 micro-in. nickel plated plating For 24-28AWG solid/stranded wire. Conforms to FCC-68.5 requirements. UL Listed.

2 prong for medium duty use (2 point wire connection)
3 prong for heavy duty use (3 Point wire connection)

WT.:001

STOCK #	DESC.	1EA	25+EA
11118-TT	RJ-45 Stranded Wire	\$0.30	\$0.28
11119-TT	RJ-45 Solid Wire 2 Prong	\$0.35	\$0.33
11120-TT	RJ-45 Solid Wire 3 Prong	\$0.42	\$0.39

FLAT
CAT-5E CABLE

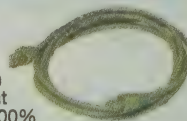
Thin, Flat, Stranded 32 AWG conductors EIA/TIA Cat. 5E patch cables with RJ-45 (8X8) plugs. Straight wired to T568B ATT-258A standards.

L: 7ft

WT.:08

STOCK #	DESC.	1EA	10+EA
19102-TT	7ft. Flat Cat-5e Cable	\$1.85	\$1.49

CAT-5E CABLE



Flexible, stranded conductor patch cables with RJ-45 (8X8) plugs. Straight wired to T568B ATT-258A standards. 100% tested wire sequence & continuity. Verified to EIA/TIA Cat. 5E standards. Plugs feature 50 micro inch gold plated contacts. Conforms to FCC requirements

L: 7ft.

WT.:18

STOCK #	DESC.	1EA	10+EA
19234-TT	7ft. Gray Cat-5e Cable	\$1.25	\$0.99

CAT- 5E PATCH
CABLE

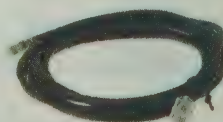
5ft. Flexible, stranded conductor patch cables with RJ-45 (8X8) plugs. Straight wired to T568B ATT-258A standards. 100% tested wire sequence & continuity. Verified to EIA/TIA Cat. 5E standards. Plugs feature 50 micro inch gold plated contacts. Conforms to FCC requirements.

L: 5ft.

WT.:06

STOCK #	DESC.	1EA
30398-TT	5ft. Blue Cat-5e Cable	\$0.99

CAT- 5E CABLE



9ft. Flexible, solid aluminum conductor patch cables with RJ-45 (8X8) plugs. Straight wired to T568B ATT-258A standards. 100% Verified to EIA/TIA Cat. 5E standards. Plugs feature 50 micro inch gold plated contacts.

L: 9ft.

WT.:18

STOCK #	DESC.	1EA
32215-TT	9ft Black Cat-5e Cable	\$0.99

UL HOOK-UP WIRE



SOLID 22AWG

Handy spool of 22AWG General purpose 300 Volt, 105Deg. "C", UL 1007/1569 Copper conductor Hook-up wire.

L: 100ft.	STOCK #	DESC.	WT: .4
			1EA
	32270-WI	22AWG Solid 100ft. Red	\$8.95
	32271-WI	22AWG Solid 100ft Black	\$8.95
	32272-WI	22AWG Solid 100ft Yellow	\$8.95
	32273-WI	22AWG Solid 100ft Blue	\$8.95
	32274-WI	22AWG Solid 100ft White	\$8.95
	32275-WI	22AWG Solid 100ft Green	\$8.95

STRANDED 22AWG

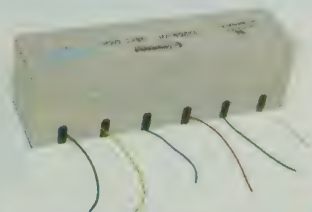
Handy spool of 22AWG General purpose 300 Volt, 105Deg. "C", UL 1007/1569 Copper Hook-up wire.

L: 100ft.	STOCK #	DESC.	WT: .4
			1EA
	32280-WI	22AWG Stranded 100ft Red	\$8.95
	32281-WI	22AWG Stranded 100ft Black	\$8.95
	32282-WI	22AWG Stranded 100ft Yellow	\$8.95
	32283-WI	22AWG Stranded 100ft Blue	\$8.95
	32284-WI	22AWG Stranded 100ft White	\$8.95
	32285-WI	22AWG Stranded 100ft Green	\$8.95

STRANDED 18AWG

L: 100ft.	STOCK #	DESC.	WT: .8
			1EA
	32290-WI	18AWG Stranded 100ft Red	\$12.95
	32291-WI	18AWG Stranded 100ft Black	\$12.95
	32292-WI	18AWG Stranded 100ft Yellow	\$12.95
	32293-WI	18AWG Stranded 100ft Blue	\$12.95
	32294-WI	18AWG Stranded 100ft White	\$12.95
	32295-WI	18AWG Stranded 100ft Green	\$12.95

SOLID UL HOOK-UP WIRE



Handy Dispenser Box

Solid 22AWG General purpose 300 Volt, 105Deg. "C", UL 1007/1569 Copper Hook-up wire in 25ft. mini spools. 1ea. Red, Black, Yellow, Blue, White & Green.

L: 150ft. total	STOCK #	DESC.	WT: .7
			1EA
	32267-WI	Solid 22AWG Wire 6 colors	\$15.95

STRANDED UL HOOK-UP WIRE

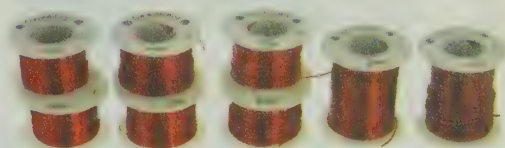


Handy Dispenser Box

Stranded 22AWG General purpose 300 Volt, 105Deg. "C", UL 1007/1569 Copper Hook-up wire in 25ft. mini spools. 1ea. Red, Black, Yellow, Blue, White & Green.

L: 150ft. total	STOCK #	DESC.	WT: .7
			1EA
	32269-WI	Stranded 22AWG Wire 6 colors	\$15.95

MAGNET WIRE



Spools of quality Enamelled Magnet wire, designed for coils and transformers.

Specification: MIL JW-1177/42, MW80C, Class 155

Core: Solid Copper Core

Insulation: Polyurethane/Polyamide

Temperature Range: -30 to +155 "C"

Solder Temp: 14-24: 430 "C"

26-30: 360 "C"

Footage shown is approximate and may vary slightly

STOCK #	AWG	FT.	DESC.	Ship WT.	1EA
1/4 Lb SPOOLS					
32860-WI	30	820	1/4 lb. Mag Wire	.35	\$9.95
32861-WI	28	520	1/4 lb. Mag Wire	.35	\$8.95
32862-WI	26	350	1/4 lb. Mag Wire	.35	\$8.95
32863-WI	24	204	1/4 lb. Mag Wire	.35	\$8.95
32864-WI	22	128	1/4 lb. Mag Wire	.35	\$8.95
32865-WI	20	80	1/4 lb. Mag Wire	.35	\$7.95
32866-WI	16	30	1/4 lb. Mag Wire	.35	\$7.95

1/2 Lb SPOOLS					
32878-WI	18	101	1/2 lb. Mag Wire	.55	\$12.95
32880-WI	14	40	1/2 lb. Mag Wire	.55	\$11.95

HOOKUP WIRE



25ft. spool of AWM 1015, 16AWG stranded black appliance wire. Rated for 600V, 105 deg. C. UL Listed.

L: 25ft.	STOCK #	DESC.	WT: .41
			1EA
	33215-WI	25ft. Spool Black 16AWG Wire	\$6.95



WIRE TIES

UL listed Natural or Black Nylon Wire & Cable ties
Sold in packs of 100

STOCK #	DESC.	WT.	1PK	10+PK
20200-TY	5-1/2" Ty-Rap	.1	\$1.70	\$1.50
24529-TY	7-1/2" Ty-Rap	.2	\$2.80	\$2.00
24530-TY	11" Ty-Rap	.5	\$5.00	\$3.90
11630-TY	4" Black Ty-Rap	.1	\$1.30	\$1.10
11508-TY	7-1/2" Black Ty-Rap	.2	\$2.50	\$2.00
11633-TY	11" Black Ty-Rap	.5	\$6.90	\$5.50
20199-PL	4" Ty-Rap	.1	\$1.10	\$0.90

STAINLESS STEEL TIES



Steel wire ties. For wire, cable or pipes.
Sold in packs of 6

L: 12"	W: 6/16"	WT: .1
STOCK #	DESC.	1EA
17873-TY	6 Pack 12in. Wire Ties	\$3.50

AC LINE MONITOR

3 digit LCD Plug In Line Monitor with Blue LED backlight.

Plugs in any NEMA 15 Outlet.
Operating Voltage: 100-300VAC
Resolution: 1V
Character Height: 0.6in.

W: 2-3/16" H: 1-5/8" D: 1" WT: .08

STOCK #	DESC.	1EA
31495-ME	300VAC Line Monitor	\$8.95



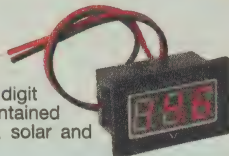
MINI DIGITAL DC V METER

Water Resistant, Mini snap-in, 3 digit Red LED panel Voltmeter. Self contained for source monitoring in battery, solar and control circuits

Operating Voltage: 2.7-30VDC
Input Range: 2.7-30V
Resolution: .1/.01 auto Range
Character Height: 0.4in.
6" wire leads/Screw Terminals

W: 1-1/8"(40mm) H: 1" (25mm) D: 1" (25mm) WT: .04

STOCK #	DESC.	1EA
32812-ME	Snap-in Red Panel Meter	\$7.95



500V AC VOLTMETER

Snap-in LCD digital panel meter with Blue backlight.
Ideal for Generators & Sine Inverters.

Character Height: 19mm (~.8in.)
Power/Range: 80-500VAC
Resolution: 1.0V
Accuracy: +-0.5% +-2LSD
3in. leads for Connections
Panel Cutout: 58.5 X 35mm

W: 2-3/8" H: 1-7/16" D: 1-1/8" WT: .08

STOCK #	DESC.	1EA
32408-ME	500VAC LCD Panel Meter	\$9.95



100VDC DIGITAL METER

Snap-in 3.5 LCD digital panel meter with Blue backlight. Self contained for source monitoring in battery, solar and control circuits
Character Height: 19mm (~.8in.)
Operating Voltage: 40-100.0VDC
Resolution: .1V
Accuracy: +-0.5% +-2LSD
Terminal Strip for Connections
Panel Cutout: 76 X 39mm.

W: 3-1/8" H: 1-11/16" D: 1" WT: .1

STOCK #	DESC.	1EA
32401-ME	100VDC LCD Meter	\$9.95



MINI 100V DC PANEL METER

3 Lead, Requires Isolated Power Supply

3 digit LED panel Voltmeter

For + Voltage only;

Note: Power & Input Share the Common Black lead

Black Wire: Power Supply - & Input -

Red Wire: Power Supply + 3 to 30VDC

White Wire: + Input 0-100V

Supply Voltage: 2.5-30VDC

Metering Input Range: 0-100VDC (99.9V)

Resolution: .1V

Character Height: .28"

2 screw mounting.

Cutout: 22.5 X 10.5mm

6in. leads

W: 33mm O/A H: 11mm D: 9mm WT: .012

STOCK #	DESC.	1EA
32321-ME	3 Wire 100VDC Meter	\$3.95



DIGITAL TEMPERATURE METER

Mini snap-in, 3 digit Blue LED panel temperature meter.

Operating Voltage: 4.5-28VDC

Temperature Range: 0-167F

Resolution: .1/1 auto Range

Character Height: 0.62in.

11" probe leads, 7in. power leads

Cutout: 46mm X 27.5mm

W: 1-7/8" H: 1-1/8" D: 1-1/8" WT: .06

STOCK #	DESC.	1EA
31066-ME	Snap-in Temp. Panel Meter	\$8.95



DUAL DIGITAL AC V/A METER

Snap-in LCD panel meter with Blue back light.

Contains a 3 digit AC Digital Volt Meter & a 3 digit AC Amp. meter. External

Current Transformer can be mounted remotely.

Character Height: 0.35in.

Voltage: 80-300VAC

Resolution: 1V

Current: 0-100A

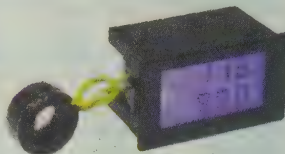
Resolution: Amps: .1

Accuracy: +-1% +-2LSD

Includes 100A Current Transformer with 15mm ID.

W: 2-3/4" H: 1-19/32" D: 1-19/32" WT: .2

STOCK #	DESC.	1EA
31496-ME	Digital AC Volt & Amp Meter	\$17.95



5 DIGIT MINI V METER

Mini snap-in, 5 digit LED panel Voltmeter. Ideal for monitoring in battery, solar and control circuits.

Operating Voltage: 3.5-30VDC

Input Range: 0 to +33.000V (No - readings)

Resolution: .001V Fixed Range

Accuracy: 0.3% +- 2LSD

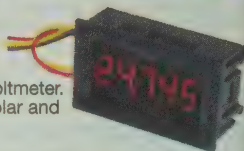
Character Height: 0.36in.

6" wire leads.

NOTE: Requires Separate power Supply if Input exceeds 30VDC

W: 1-7/8" H: 1-1/8" D: 7/8" WT: .04

STOCK #	DESC.	1EA
32711-ME	5 Digit Panel Volt Meter	\$12.95



20VDC DIGITAL METER

Snap-in 3.5 LCD digital panel meter with Blue backlight. Self contained for source monitoring in battery, solar and control circuits
Character Height: 19mm (~.8in.)
Operating Voltage: 7.5-19.99VDC
Resolution: .01V
Accuracy: +-0.5% +-2LSD
Terminal Strip for Connections
Panel Cutout: 76 X 39mm.

W: 3-1/8" H: 1-11/16" D: 1" WT: .1

STOCK #	DESC.	1EA
32405-ME	19.99VDC LCD Meter	\$9.95



LARGE DIGIT PANEL METERS

3-1/2 digit, LCD, 200.0mV DC basic input, .8" character height, DPMs with black plastic face. adj. decimal point, auto polarity, >100Mohm input imp. 2 readings/sec., 0.5% accuracy. Snap-in panel mounting. Built in scaling resistors for 20V, 200V & 500V ranges
5 VDC powered, Meter power and Input can share a common Ground (-Input/-Power)

W: 3-3/8" H: 1-5/8" D: 1" O/A WT: .13

STOCK #	DESC.	1EA	10+EA
12306-ME	5V LCD Panel Meter	\$9.95	\$9.49



PANEL METER AC VOLTS, 100 AMPS AND WATTS



Blue back-lit, Snap-in LCD panel meter that measures AC Volts, Amps, Watts, Watt hours.
Adjustable Overload function (over power alarm threshold: Backlight Flashes.) Ideal for submetering and monitoring.
Terminal Strip for Connections & Back Cover.
External Current Transformer can be mounted remotely.
Input Voltage: 80-260VAC Resolution: 1V
Input Range Amps: 0-99.99A Resolution: Amps: .01
Watts: 0-22KWmax
Resolution: <1KW=0.1W, <10KW=1W, <22KW=100W
Accuracy: +-1% +-1LSD
Current Transformer I/D: 15mm
Cutout: W: 84.6mm H: 44.6mm
W: 3-9/16" H: 2" D: 1" WT: .2

STOCK #	DESC.	1EA
32403-ME	100 Amp Multi Function Meter	\$24.95

PANEL METER AC VOLTS, 20 AMPS AND WATTS



Blue back-lit, Snap-in LCD panel meter that measures AC Volts, Amps, Watts, Watt Hours.
Adjustable Overload function (over power alarm threshold: Backlight Flashes.) Ideal for submetering and monitoring.
Terminal Strip for Connections & Back Cover.
Supplied Internal Current Transformer.
Input Voltage: 80-260VAC Resolution: 1V
Input Range Amps: 0-20A Resolution: Amps: .01
Watts: 0-4500max
Resolution: <1KW=0.1W, >1KW=1W
Accuracy: +-1% +-1LSD
Cutout: W: 84.6mm H: 44.6mm
W: 3-9/16" H: 2" D: 1" WT: .2

STOCK #	DESC.	1EA
32409-ME	20 Amp Multi Function Meter	\$19.95

PANEL METER AC VOLTS, 100 AMPS



Snap-in LED panel meter contains both a 3digit AC Digital Volt Meter and a 3 digit AC Amp. meter. External Current Transformer can be mounted remotely
Character Height: 0.38in.
Voltage: 80-300VAC Resolution: 1V
Current: 0-99.9A Resolution: Amps: .1
Accuracy: +-1% +-1LSD
Includes 100A Current Transformer with 15mm ID.
Cutout: W: 68mm H: 38mm

STOCK #	DESC.	1EA
30301-ME	100 Amp Multi Function Meter	\$19.95

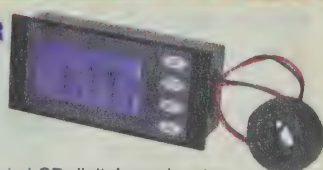
LCD FREQUENCY METER 10-199HZ



Snap-in LCD digital panel meter with Blue backlight.
Character Height: 20mm (~.8in.)
Power: 12VDC Measured Frequency: 10.0-199.9hz
Resolution: 0.1Hz Accuracy: +-0.5% +-2LSD
Terminal Strip for Connections
Cutout: W: 76mm H: 39mm
W: 3-1/8" H: 1-11/16" D: 1" WT: .1

STOCK #	DESC.	1EA
32406-ME	10-199Hz LCD Frequency Meter	\$14.95

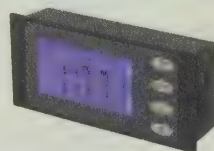
PANEL METER AC VOLTS, 100 AMPS AND WATTS



Blue Back Light, Snap-in LCD digital panel meter with back safety cover and 100A Current Transformer. Measures AC Volts, Amps, Watts, Watt hours, Operational Time (Run Time). Ideal for submetering and monitoring.
Input Voltage: 80-260VAC Resolution: 0.01V
Input Range Amps: 0-100A Resolution: Amps: .01
Watts: 0-22000max
Resolution: 0.1W (<1KW): 1W (>1KW-9999W): .1KW (>10KW)
Energy Used: 0-9999.99KWh
Run Time: 0-9999.59 Hours
Accuracy: +-1% +-1LSD
Terminal Strip Connections and Back Cover
Cutout: W: 92mm H: 39.4mm
W: 3-3/4" H: 1-3/4" D: 1" WT: .3

STOCK #	DESC.	1EA
32545-ME	100 Amp Multi Function Meter	\$17.95

PANEL METER AC VOLTS, 20 AMPS AND WATTS



Blue Back Light, Snap-in LCD digital panel meter with back safety cover. Measures AC Volts, Amps, Watts, Watt hours, Operational Time (Run Time). Ideal for submetering and monitoring.
Input Voltage: 80-260VAC Resolution: 0.01V
Input Range Amps: 0-20A Resolution: Amps: .01
Watts: 0-4400max Resolution: 0.1W
Energy Used: 0-9999.99KWh
Run Time: 0-9999.59 Hours
Accuracy: +-1% +-1LSD
Terminal Strip Connections and Back Cover
Cutout: W: 92mm H: 39.4mm
W: 3-3/4" H: 1-3/4" D: 1" WT: .16

STOCK #	DESC.	1EA
32407-ME	20 Amp Multi Function Meter	\$14.95

300VAC PANEL METER



Snap-in, 3 digit LED panel Voltmeters. Self contained for source and load monitoring in control circuits.
Operating Voltage: 75-300VAC Sine Wave Only
Input Range: 75-300VAC
Resolution: 1V
Character Height: 0.56in. 6" wire leads.
W: 2-3/4" H: 1-5/8" D: 7/8" WT: .06

STOCK #	DESC.	1EA
30220-ME	Red 300VAC Panel Meter	\$6.95
31493-ME	Green 300VAC Panel Meter	\$6.95
31494-ME	Blue 300VAC Panel Meter	\$6.95

DIGITAL V/A/HZ METER



Snap-in LED digital panel meter that measures AC Volts, Amps & frequency. Generators & Sine Inverters.
Character Height: .8in.
Power: 12VDC +- 10% (Not Included)
Measured Voltage: 10-600VAC
Measured Range Amps: 1-99.9A Resolution: Amps: .1A
Measured Frequency: 10-99.9hz Resolution: 0.1Hz
Accuracy: +-1% +-1LSD
Terminal Strips for Connections
Includes Mini Current Transformer
W: 3-3/4" H: 1-15/16" D: 1" WT: .18

STOCK #	DESC.	1EA
31567-ME	V/A/Hz AC Panel Meter	\$19.95

PANEL METER DC VOLTS, 100 AMPS AND WATTS



Blue back-lit, Snap-in LCD panel meter with shunt that measures DC Volts, Amps, Watts, Watt hours. Adjustable Over/Under voltage Alarm (Backlight Flashes.) Ideal for submetering and monitoring. Terminal Strip for Connections & Back Cover. Input Voltage: 6.5-100VDC Resolution: .01V Input Range Amps: 0-100A Resolution: Amps: .01 Watts: 0-10KWmax Resolution: <1KW=0.1W, <10KW=1W Energy Used: 0-9999KWH Resolution: <10KWH=0-9999WH, >10KW=9999KW Accuracy: +1% +-1LSD Shunt: 100A Supplied Cutout: 84.6mm X 44.6mm
W: 3-9/16" H: 2" D: 1" WT: .2

STOCK #	DESC.	1EA
32542-ME	100 Amp DC Multi Function Meter	\$18.95

PANEL METER DC VOLTS, 20 AMPS AND WATTS



Blue back-lit, Snap-in LCD panel meter that measures DC Volts, Amps, Watts, Watt hours. Adjustable Over/Under voltage Alarm (Backlight Flashes.) Ideal for submetering and monitoring. Terminal Strip for Connections & Back Cover. Input Voltage: 6.5-100VDC Resolution: .01V Input Range Amps: 0-20A Resolution: Amps: .01 Watts: 0-2KWmax Resolution: <1KW=0.1W, <2KW=1W Energy Used: 0-9999KWH Resolution: <10KWH=0-9999WH, >10KW=9999KW Accuracy: +1% +-1LSD Shunt: Internal Cutout: 84.6mm X 44.6mm
W: 3-9/16" H: 2" D: 1" WT: .2

STOCK #	DESC.	1EA
32541-ME	20 Amp DC Multi Function Meter	\$17.95

MINI DIGITAL DC 30V/10AMP METER



Mini snap-in LED panel meter contains both a 3 digit Digital Volt Meter and a 3 digit Amp. meter. Character Height: 0.28in. Power Supply Voltage: 4.5-30VDC Input Voltage: 4.5-30VDC Resolution: 0.1V Input Range Amps: 0-10A (9.99) Resolution: Amps: .01 Accuracy: +1% +-1LSD For source monitoring: Input Voltage must be between 4.5 & 30VDC Ammeter Connects in the return side of Load
W: 1-7/8" H: 1-1/8" D: 1-1/2" (inc. Con.) WT: .06

STOCK #	DESC.	1EA
30303-ME	30VDC 10Amp DC Panel Meter	\$12.95

MINI DIGITAL DC 30V/100AMP METER



Red LED mini snap-in panel meter contains both a 3 digit Digital Volt Meter and a 3 digit Amp. meter. Includes 100A Shunt Character Height: 0.28in. Input Voltage: 3.5-30VDC Resolution: 0.1V Input Range Amps: 0-100A (99.9) Resolution: Amps: .1 Accuracy: +1% +-1LSD For source monitoring: Input Voltage must be between 3.5 & 30VDC Ammeter Shunt Connects in the return side of Load Shunt: L: 4-1/4" W: 7/8" H: 1" (inc. Bolts) Meter W: 1-7/8" H: 1-1/8" D: 1" WT: .4

STOCK #	DESC.	1EA
32063-ME	30VDC 100Amp DC Panel Meter	\$17.95

SNAP-IN 12VDC CHARGE MONITOR PANEL METER



Mini snap-in 12VDC Charge Monitor, 3 digit Red LED Voltmeter with a 10 segment Bargraph. Self contained for source monitoring in 12V systems. Response Rate is Damped: ~ 5sec-ond/Sample Operating Voltage: 12VDC Input Range: 10-13V Meter Resolution: .1V Character Height: .28" Bargraph Accuracy: ~1% 6" wire leads. Cutout Size: 45.5mm X 27mm Bargraph: 10 Segment LED
<10.8V 1 Red Flash ~ 11.9V 2 Red + 3 Yellow + 1 Green
~ 10.8V 2 Red ~ 12.1V 2 Red + 3 Yellow + 2 Green
~ 11.0V 2 Red + 1 Yellow ~ 12.4V 2 Red + 3 Yellow + 3 Green
~ 11.3V 2 Red + 2 Yellow ~ 12.7V 2 Red + 3 Yellow + 4 Green
~ 11.6V 2 Red + 3 Yellow ~ 12.9+V 2 Red + 3 Yellow + 4 Green + Blue

W: 1-7/8"	H: 1-1/8"	D: 7/8"	WT: .04
STOCK #	DESC.	1EA	
32322-ME	Charge Monitor Meter	\$12.95	

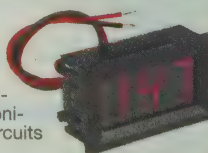
INPUT POWERED, 3 DIGIT BATTERY MONITOR



Mini, LED meter with 5in. Red & Black leads Input: 3.5-30VDC Max Display: 3 Digit, .375" character height LED/Black Face Auto range 3.5-9.99/10.0-30.0 2 readings/sec., 1.0% accuracy+-1LSD. 2 screw mounting.

W: 33mm O/A	H: 15mm	D: 11mm	WT: .015
STOCK #	DESC.	1EA	
19598-ME	Self Powered Red LED Panel Meter	\$4.95	
19599-ME	Self Powered Blue LED Panel Meter	\$4.95	
19600-ME	Self Powered Green LED Panel Meter	\$4.95	

MINI DIGITAL DC VOLT METER



Mini snap-in, 3 digit LED panel Voltmeter. Self contained for source monitoring in battery, solar and control circuits Operating Voltage: 4.5-30VDC Input Range: 4.5-30V Resolution: .1/.01 auto Range Character Height: 0.62in. 6" wire leads.

W: 1-7/8"	H: 1-1/8"	D: 7/8"	WT: .04
STOCK #	DESC.	1EA	
33065-ME	Snap-in Red Panel Meter	\$5.95	
33066-ME	Snap-in Green Panel Meter	\$6.95	
33067-ME	Snap-in Blue Panel Meter	\$6.95	

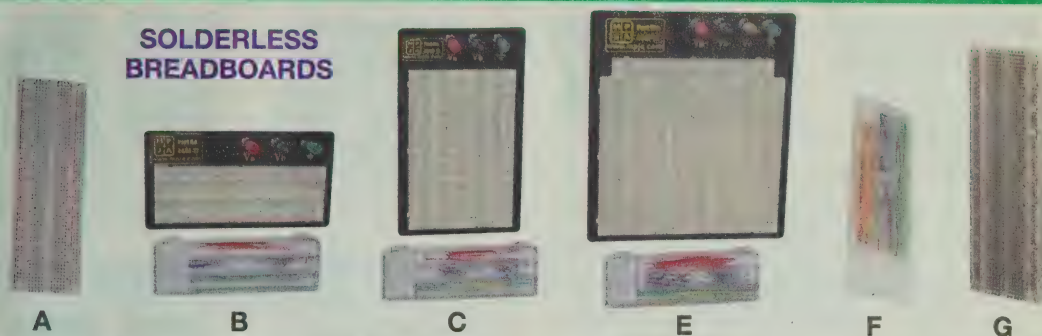
SWITCHBOARD VOLT & AMP METERS



Quality switchboard panel meters. Accuracy rated 2-1/2%. Black legends on white face with red tip pointer. Plastic case with "zero" adjustment. Front mounts in 2-3/8" (60mm) hole. Two mounting screws. AC & DC ranges.

W: 3-1/8"	H: 2-1/2"	D: 2-3/8"	WT: .24
STOCK #	DESC.	1EA	10+EA
28718-ME	0-15V DC Voltmeter	\$13.95	\$12.95
28719-ME	0-30V DC Voltmeter	\$13.95	\$12.95
28720-ME	0-50V DC Voltmeter	\$13.95	\$12.95
28725-ME	0-100uA DC Ammeter	\$13.95	\$12.95
28726-ME	0-1mA DC Ammeter	\$13.95	\$12.95
28729-ME	0-100mA DC Ammeter	\$13.95	\$12.95
28731-ME	0-5A DC Ammeter	\$13.95	\$12.95
28732-ME	0-15A DC Ammeter	\$13.95	\$12.95
28733-ME	0-30A DC Meter+ Shunt	\$22.95	-----
19260-ME	0-100A DC Meter+Shunt	\$24.95	-----
28722-ME	0-150VAC Voltmeter	\$13.95	\$12.95
19258-ME	0-25VAC Voltmeter	\$13.95	\$12.95
28735-ME	0-5A AC Ammeter	\$13.95	\$12.95
19257-ME	0-10A AC Ammeter	\$13.95	\$12.95
28736-ME	0-15A AC Ammeter	\$13.95	\$12.95

SOLDERLESS BREADBOARDS



White ABS plastic body (except G clear), B, C & E come with metal mounting base. Nickel plated phosphor bronze contacts. Contact resistance less than 1 milliohm @ 1kHz. Tested for over 10,000 cycles. Snap lock molded dovetail for combining multiple boards, Suitable for 19-29 AWG wire & all DIP size components. Please visit our web site for more detailed information.

STOCK #	FIG.	DESC.	SIZE L X W	WT.	1EA	10-EA
24443-TE	A	830 point	6-1/2" X 2-1/8"	.3	\$4.95	\$3.95
24444-TE	B	830 point 3 Binding Post and Jumper Kit	7-7/8" X 4-1/8"	.8	\$9.95	\$8.95
24445-TE	C	1660 point 3 Binding Post and Jumper Kit	8-3/8" X 5-1/8"	.9	\$12.95	\$11.49
24447-TE	E	3220 point 4 Binding Post and Jumper Kit	10-3/8" X 9-1/8"	2	\$22.95	\$19.49
27027-TE	F	140 Piece 22 AWG Jumper Wire Kit		.3	\$3.95	\$3.49
18103-TE	G	830 point Clear ABS Body	6-1/2" X 2-1/8"	.3	\$4.85	\$3.95

POWERED BREADBOARD

Breadboard with built-in power supply. Dual LED Meters monitor the + & - Variable output supplies.

Features:
2 LED Voltmeters,
4 power supply binding posts,
5 Distribution strips (500 pts),
3 Breadboard panels (1890Pts.),
One +5VDC @ 1.5Amp supply,
One 0 to +16VDC @ 500mA supply,
One 0 to -16VDC @ 500mA supply
All parts are mounted in a ABS plastic case.
Includes IEC power cord.

W: 7-7/8"	D: 10-1/2"	T: 3-3/8"	WT: 2.8
STOCK #	DESC.	1EA	
32920-TE	Powered Breadboard	\$99.95	

POWERED BREADBOARD

Breadboard with attached 3.3V & 5V power supplies.

Features: 2 Distribution strips (200 pts), Breadboard (830pts) panel, a +3.3VDC & +5VDC power supplyBoard. Max total load: 700mA. Supply Board plugs into breadboard. Selectable 5V, 3.3V or No Bus voltage for both bus strips. Power On/Off switch on board. Input power from USB Port or 5.5/2.5mm power jack. 6.5-12VDC input range. Includes a 12V Plug supply. Panel cutout: 45.5 X 26.5mm

		WT: .5
STOCK #	DESC	1EA
30176-TE	Powered Breadboard	\$10.95

MINI SOLDERLESS BREADBOARDS

Three 170 tie point solderless breadboards; 1 each in Red, White & Blue. Features: ABS plastic body, Nickel plated phosphor bronze contacts Rated 2A Max. Contact resistance less than 1 milliohm @ 1kHz. Tested for over 10,000 cycles. Suitable for 9-29 AWG wire and all DIP size components.

L: 1.8"	W: 1.4"	H: .37"	Total WT: .2
STOCK #	DESC.	1EA	
19048-TE	3 Mini Breadboards	\$7.95	

65PC. MOLDED JUMPERS

Multi-colored flexible jumpers with a .024in. dia. steel pin with molded strain relief on ends. Designed for breadboards. You get 4pcs. ea. 240mm and 200mm, 8pcs. 150mm, and 49pcs 120mm

L: 4-1/2" to 9-1/2"		WT: .08
STOCK #	DESC.	1EA
30116-PL	65Pc. Breadboard Jumpers	\$3.95

40PC. JUMPER PINS

Multi-colored ribbon cable with a single Pin on both ends of each wire. Peel off what you need. .025" pin fits Arduino header sockets

L: 7"	WT: .08	
STOCK #	DESC.	1EA
31217-PL	Header Jumpers/Pins	\$4.95

40PC. FEMALE JUMPERS

Multi-colored ribbon cable with a single socket on both ends of each wire. Peel off what you need. Socket accepts .025 round or square pins

L: 8"	WT: .09
STOCK #	DESC.
30117-PL	8in Header Jumpers/Sockets

40PC. JUMPERS MALE/FEMALE

Multi-colored ribbon cable with a single Male Pin on one end and a single Female Socket on the other end of each wire. Peel off what you need. .025" pin/sockets fits Arduino/Raspberry-PI headers.

L: 7"	WT: .08	
STOCK #	DESC.	1EA
31218-PL	Header Jumpers/Pins & Sockets	\$2.72

3 PIN HEADER JUMPERS

11in. Multi-colored ribbon cable with a 3 position socket on both ends of wire. Socket accepts .025 round or square pins. .10in. Pitch.

L: 11"		WT: .007
STOCK #	DESC.	1EA
31062-PL	3 Cond. Header Jumpers, 11in.	\$0.59

PROTOBOARD ASSORTMENT

Handy pack of our best selling Mini Protoboards. Double Sided, .062" FR-4 board, .1" pad spacing Plated through copper pads

1 each of:

- 30123 PB 3-1/8in. X 13/16in. (8X2cm) 6 X 28 grid/168 total holes, with 2 "Finger Pads" .10" C/C on both ends.
- 31091 PB 2-3/8in. X 1-5/8in. (6X4cm) 20 X 14 grid/280 total holes, with 12 "Finger pads" .10in C/C on both ends.
- 31169 PB 2-3/4in. X 2in. (7X5cm) 24 X 18 grid/432 total holes, with 16 "Finger pads" .10in C/C on both ends.
- 31253 PB 2-3/4in. X 1-3/16in. (7X3cm) 10 X 24 grid /240 total holes, with 16 "Finger pads" .10in C/C on both ends.

WT: .06

STOCK #	DESC.	1EA
32065-PB	Proto Board Assortment	\$2.05

5-7/8 X 3-1/2" PROTO BOARD

Double Sided
.062" FR-4 board
.1" pad spacing
Plated copper pads

General purpose prototyping board. 54 X 33 grid pattern with 1728 total Plated through holes. 30 double sided .1" pitch finger pads on both ends. For multiple ICs with room for discrete components.

L: 5-7/8" (15cm) W: 3-1/2" (9cm)

WT: .08

STOCK #	DESC.	1EA
32012-PB	5-7/8" Double Side Proto Board	\$5.95

7-7/8 X 3-1/2" PROTO BOARD

Double Sided
.062" FR-4 board
.1" pad spacing
Plated copper pads

General purpose prototyping board. 72 X 56 grid pattern with 4032 total Plated through holes. 34 double sided .156" pitch finger pads on both ends. For multiple ICs with room for discrete components.

L: 7-7/8" (20cm) W: 5-7/8" (15cm)

WT: .18

STOCK #	DESC.	1EA
32013-PB	7-7/8" Double Side Proto Board	\$9.95

11-15/16 X 3-1/2" PROTO BOARD

Double Sided
.062" FR-4 board
.1" pad spacing
Plated copper pads

General purpose prototyping board. 112 X 75 grid pattern with 4032 total Plated through holes. 45 double sided .156" pitch finger pads on both ends. For multiple ICs with room for discrete components.

L: 11-15/16" (30cm) W: 7-7/8" (20cm)

WT: .36

STOCK #	DESC.	1EA
32014-PB	11-15/16" Double Side Proto Board	\$19.95

14 PIN SOP ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Mini adapter board converts 14 lead TSOP/SSOP/SOP/SOIC/SO .65 or 1.27mm pitch Flat Pack to a 14 pin .1" pitch X .5" width (2.54mm X 12.7mm) DIP pattern. Pins not Supplied

SQ: 45/64 (18mm)

WT: .0005

STOCK #	DESC.	1EA
31864-PB	14 Pin SOP Proto Board	\$0.05

20 PIN SOP ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Mini adapter board converts 20 lead SO/SOP/SOIC/SSOP/TSSOP & MSOP .65 or 1.27mm pitch Flat Pack to a 20pin .1" pitch X .6" width (2.54mm X 15.24mm) DIP pattern. Pins not Supplied

L: 1" (25.5mm) W: 23/32" (18mm)

WT: .0001

STOCK #	DESC.	1EA
31460-PB	20 Pin Adapter Proto Board	\$0.69 \$0.49

24 PIN SOP ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Mini adapter board converts 24lead .65 or 1.27mm pitch SO/SOP/SOIC/SSOP/TSSOP & MSOP packages to a 24pin .1" pitch X .6" width (2.54mm X 15.24mm) DIP pattern. Pins not Supplied

L: 1-3/16" (30.5mm) W: 23/32" (18mm)

WT: .0008

STOCK #	DESC.	1EA
31461-PB	24 Pin Adapter Proto Board	\$0.99

28 PIN SOP ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Mini adapter board converts 28 lead .65 or 1.27mm pitch SO/SOP/SOIC/SSOP/TSSOP & MSOP packages to a 28 pin .1" pitch X .7" width (2.54mm X 18mm) DIP pattern. Pins not Supplied

L: 1-13/16" (36mm) W: 13/16" (20mm)

WT: .0005

STOCK #	DESC.	1EA
31462-PB	28 Pin Adapter Proto Board	\$0.99

44/48 PIN QFN ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Adapter board converts a 44/48 lead QFN .5mm pitch Flat Pack pitch to a .1" (2.54mm) pitch quad pins Square pattern. Pins not Supplied

SQ: 1" (25.5mm)

WT: .001

STOCK #	DESC.	1EA
31463-PB	44/28 Pin QFP Adapter Board	\$0.99

16 PIN SOP ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Mini adapter board converts 16 lead TSOP/SSOP/SOP/SOIC/SO .65 or 1.27mm pitch Flat Pack to a 16pin .1" pitch X .5" width (2.54mm X 12.7mm) DIP pattern. Pins not Supplied

L: 27/32" (20.3mm) W: 19/32" (15.1mm)

WT: .0007

STOCK #	DESC.	1EA
31459-PB	16 Pin SMD Adapter Proto Board	\$0.59

20 PIN IC PROTO BOARD

Single Sided
.062" phenolic board
.1" pad spacing

Small general purpose breakout board for prototyping. Holds one 20 pin DIP IC or discrete parts with .300-.700" width.

SQ: 1-3/4"

WT: .01

STOCK #	DESC.	1EA
32540-PB	20 Pin DIP Proto Board	\$1.00 \$0.79

4-11/16 X 3-1/8" PROTO BOARD

Double Sided
.062" FR-4 board
.1" pad spacing
Plated copper pads

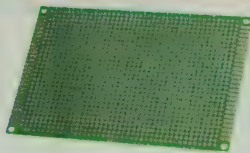
General purpose prototyping board. 42 X 30 grid pattern with 1260 total Plated through holes. 27 double sided .1" pitch finger pads on both ends. For multiple ICs with room for discrete components.

L: 4-11/16" (12cm)

W: 3-1/8" (8cm)

WT: .05

STOCK #	DESC.	1EA
32011-PB	Double Side Proto Board	\$4.95



3-1/8" X 13/16" PROTO BOARD

Double Sided
.062" FR-4 board
.1" pad spacing
Plated through copper pads

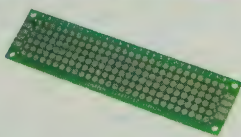
Mini general purpose prototyping board. 6 X 28 grid pattern with 168 total holes Holds 1+ 14 or 16 pin ICs with room for several discrete components. Ideal for interface or signal isolation circuits.

L: 3-1/8" (8cm)

W: 13/16" (2cm)

WT: .011

STOCK #	DESC.	1EA
30123-PB	Mini FR-4 Proto Board	\$0.99



2-3/4" X 1-3/16" PROTO BOARD

Double Sided
.062" FR-4 board
.1" pad spacing
Plated through copper pads

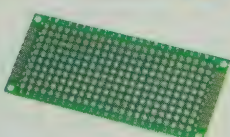
Mini general purpose prototyping board. 10 X 24 grid pattern with 240 total holes Holds 1+ 14 or 16 pin ICs with room for several discrete components. Ideal for interface or signal isolation circuits. 4 corner mounting holes

L: 2-3/4" (7cm)

W: 1-3/16" (3cm)

WT: .012

STOCK #	DESC.	1EA
31253-PB	Double Side Proto Board	\$1.19



2-3/8" X 1-5/8" PROTO BOARD

Double Sided
.062" FR-4 board
.1" pad spacing
Plated copper pads

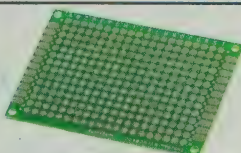
Mini general purpose prototyping board. 20 X 14 grid pattern with 280 total Plated through holes. 12 "finger pads" on both ends. Holds 1+ 14 or 16 pin ICs with room for several discrete components.

L: 2-3/8" (6cm)

W: 1-5/8" (4cm)

WT: .016

STOCK #	DESC.	1EA
31091-PB	Double Side Proto Board	\$1.29



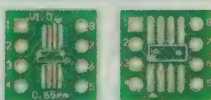
8 PIN SOP ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Mini adapter board converts 8 lead TSOP/SSOP/SOP/SOIC/SO .65 or 1.27mm pitch Flat Pack to a to a 8 pin .1" pitch X .5" width (2.54mm X 12.7mm) DIP pattern. Pins not Supplied

WT: .001

STOCK #	DESC.	1EA
31456-PB	8 Pin SMD Proto Board	\$0.59



10 PIN SOP ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Mini adapter board converts 10 lead TSOP/SSOP/SOP/SOIC/SO .5 or .95mm pitch Flat Pack to a to a 10 pin .1" pitch X .5" width (2.54mm X 12.7mm) DIP pattern. Pins not Supplied

L: 1/2" (12.8mm)

W: 13/32" (10mm)

WT: .0005

STOCK #	DESC.	1EA
31457-PB	10 Pin SMD Proto Board	\$0.59



1-3/4" X 1-1/2" PROTO BOARD

Single Sided
.062" phenolic board
.1" pad spacing
unplated copper pads

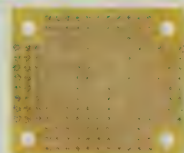
Mini general purpose prototyping board. 17 X 14 grid pattern with 202 total holes (9 missing in corners). Holds 1+ 14 or 16 pin ICs with room for several discrete components. Ideal for interface or signal isolation circuits. Fits 15917-BX Case.

L: 1-3/4"

W: 1-1/2"

WT: .009

STOCK #	DESC.	1EA	10+EA
15918-PB	Mini Proto Board	\$0.59	\$0.49



2-5/16" X 1-15/16" PROTO BOARD

Single Sided
.062" phenolic board
.1" pad spacing
unplated copper pads

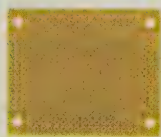
Mini general purpose board for prototyping. 23 X 18 grid pattern with 378 total holes (9 missing in corners). Holds 2+ 14 or 16 pin ICs with room for several discrete components. Ideal for interface or signal isolation circuits. Fits 15915-BX.

L: 2-5/16"

W: 1-15/16"

WT: .013

STOCK #	DESC.	1EA	10+EA
16227-PB	Small Proto Board	\$0.79	\$0.49



3-3/16" X 2-1/2" PROTO BOARD

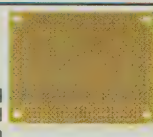
Single Sided, .062" phenolic board, .1" pad spacing, unplated copper pads. 31 X 24 grid pattern with 708 total holes (9 missing in corners). Holds 3+ 16 pin ICs. Fits 15913-BX Case.

L: 3-3/16"

W: 2-1/2"

WT: .024

STOCK #	DESC.	1EA	10+EA
15914-PB	Medium Proto Board	\$1.10	\$0.89



4-5/16" X 3-1/8" PROTO BOARD

Single Sided
.062" phenolic board
.1" pad spacing
unplated copper pads

General purpose board for prototyping. 42 X 31 grid pattern with 1293 total holes (9 missing in corners). Holds 10+ 14 or 16 pin ICs with room for several discrete components. Ideal for interface or signal isolation circuits. Fits 15911-BX Case.

L: 4-5/16"

W: 3-1/8"

WT: .036

STOCK #	DESC.	1EA	10+EA
15912-PB	Large Proto Board	\$1.75	\$1.25



SMD COMPONENT ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

Mini adapter board converts 8 SMD resistors/Capacitors to a 16 pin .1" pitch X .3" width (2.54mm X 7.52mm) DIP pattern. Pins not Supplied

L: 13/16" (20.3mm)

W: 13/32" (10.16mm)

WT: .001

STOCK #	DESC.	1EA
31435-PB	16 Pin SMD Component Board	\$0.99



TQFP ADAPTER BOARD

Double Sided
.062" FR-4 board
Plated copper pads

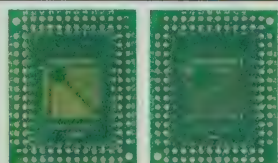
Adapter board converts a 32-100Pin TQFP .5mm pitch Flat Pack or a 32-64 Pin TQFP .8mm pitch to a .1" (2.54mm) pitch quad pins, Square pattern. Pins not Supplied

L: 1-13/16" (47.5mm)

W: 1-1/2" (38mm)

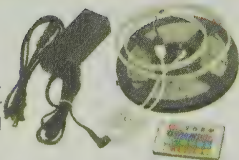
WT: .01

STOCK #	DESC.	1EA
31464-PB	64/100 Pin TQFP Adapter Board	\$0.99



RGB LED STRIP, CONTROLLER & SUPPLY

5m long, 10mm wide PVC encapsulated, flexible strip of Tri-color LEDs on 34mm C/C (150 Total LEDs). 120 deg. view angle. 3in. color coded leads with a .1in. header socket on one end. Can be cut every 3 LEDs (100mm) Peel-N-Stick Backer. Remote Controlled Mini Driver module plugs directly into the RGB LED strip. 5 functions 1: Flash-blinking rotation of multi colors, 2: Strobe- White (RGB) Fast fade up/down. 3: Fade- Slow rotation through 15 color combinations. 4: Smooth- Fast Rotation of Red, Green & Blue. 5: Static- non flash/fade of selected 1 of 16 colors. Includes 12VDC @ 2.5A adapter Power supply with cord.



WT: 1.3

STOCK #	DESC.	1SPool
31541-OP	RGB LED Strip & Controller	\$19.95

5M RGB LED STRIP

5m long, PVC encapsulated, flexible strip of Tri-color LEDs on 34mm C/C (150 Total LEDs). 12VDC operation, 3.0A max current draw (1A/Color). 120 deg. View angle. 3in. color coded leads with a .1in. header socket on one end. Can be cut every 3 LEDs (100mm) Individual LED Intensity: RED:500, BLUE:220, GREEN:900mcd Peel-N-Stick Backer. CE/RoHS



L: 5m W: 10mm T: 2mm WT: .45

STOCK #	DESC.	1SPool
31365-OP	5m RGB LED Flex Strip	\$14.95

5M BLUE LED STRIP

Indoor/Outdoor

5m long, Water resistant, PVC encapsulated, flexible strip of LEDs on 17mm C/C (300 Total LEDs). 12VDC operation 2.0A max current draw. 120 deg. view angle. 3in. leads on one end. Can be cut every 3 LEDs (50mm) Individual LED Intensity: 350mcd Luminous Flux/1m: 60 lumens Peel-N-Stick Backer. CE/RoHS



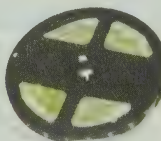
L: 5m W: 10mm T: 2mm WT: .45

STOCK #	DESC.	1SPool
19441-OP	5m Blue LED Flex Strip	\$14.95

5M WHITE LED STRIP

Indoor

5m long, flexible strip of LEDs on 17mm C/C (300 Total LEDs). 12VDC operation 0.4A max current draw. 120 deg. view angle. 3in. leads on one end. Can be cut every 3 LEDs (2in.) Color: Cool White: 6500-7500K Individual LED Intensity: 800mcd Luminous Flux/1m: 270 lumens min. Peel-N-Stick Backer. INDOOR ONLY



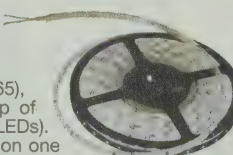
L: 5m W: 8mm T: 2.5mm WT: .12

STOCK #	DESC.	1SPool
31192-OP	5m White LED Flex Strip	\$9.95

5M WHITE LED STRIP

Indoor/Outdoor

5m long, Weather resistant (IP-65), PVC encapsulated, flexible strip of LEDs on 17mm C/C (300 Total LEDs). 120 deg. view angle. 3in. leads on one end. Can be cut every 3 LEDs (50mm) Power: 12VDC @ <100mA Individual LED Intensity: ~800mcd Luminous Flux/1m: ~660 lumens Peel-N-Stick Backer. CE/RoHS

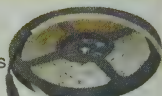


L: 5m W: 8mm T: 2mm WT: .45

STOCK #	DESC.	1SPool
19434-OP	5m White LED Flex Strip, Cool White	\$14.95

5M WHITE LED 12V IP65

5m long, flexible strip of #3528, White LEDs 60LEDs/M (300 Total LEDs). 12VDC operation 1.5A max current draw. 120 deg. view angle. 6in. lead on one end with a 5.5/2.1mm Coaxial socket. Can be cut every 3 LEDs (2in.) Color: White: 6000-6500K Individual LED Intensity: 800mcd Luminous Flux/1m: 270 lumens min. Peel-N-Stick Backer Water resistant, not submersable IP-65



L: 5m W: 8mm T: 2mm WT: .4

STOCK #	DESC.	1SPool
31364-OP	5m White LED Flex Strip	\$13.95

5M RED LED 12V IP65

5m long, flexible strip of #3528 Red LEDs 60LEDs/M (300 Total LEDs). 12VDC operation 1.5A max current draw. 120 deg. view angle. 6in. lead on one end with a 5.5/2.1mm Coaxial socket. Can be cut every 50mm 3 LEDs (~2in.) Color: Red 625-630nm Individual LED Intensity: 200mcd min Luminous Flux/1m: 500 lumens min. Peel-N-Stick Backer Water resistant; not submersable IP-65



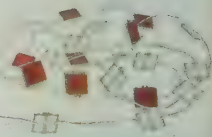
L: 5m W: 8mm T: 2mm WT: .4

STOCK #	DESC.	1SPool
31362-OP	5m Red LED Flex Strip	\$12.95

72 LUMEN LED MODULE STRING

12V, +-5V DC input Only.

20 module string of 72 Lumens/Module White LED lights featuring: 4 high lumen LEDs/module. 120 deg. beam angle. Current: 1.6A (80mA/module) Color Temp: ~5000 to 6500 Steel case, Peel-n-stick backer, clear epoxy potting. CE/RoHS Module Size: L: 1-7/16" W: 1-3/4" T: 3/16"



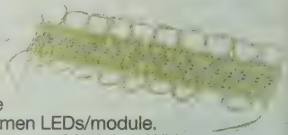
L: 115" WT: .44

STOCK #	DESC.	1EA
19438-OP	20 White 72 lm Light Modules	\$19.95

HIGH OUTPUT LED MODULES

12V, +-5V DC input Only.

20 module string of White LED lights featuring: 2 high lumen LEDs/module. 120 deg. beam angle. 3" between Modules. White plastic case, Peel-n-stick backer, clear epoxy potting. CE/RoHS Current: .8A (40mA/module) Color Temp: ~5000 to 6500 36 Lumens/Module Module: L: 2-3/8" W: 9/16" T: 3/8"



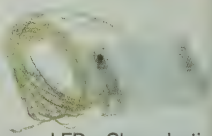
L: 86" WT: .25

STOCK #	DESC.	1EA
31366-OP	20 White 36 lm Light Modules	\$14.95

MICRO LED STRING

50 LEDs in a 5m string. Tiny (4 X 1mm) SMD type LEDs attached to fine wires. 12" to first LED, 4" between LEDs. Clear plastic battery case holds 3 "AA" batteries (NOT included) and a power switch.

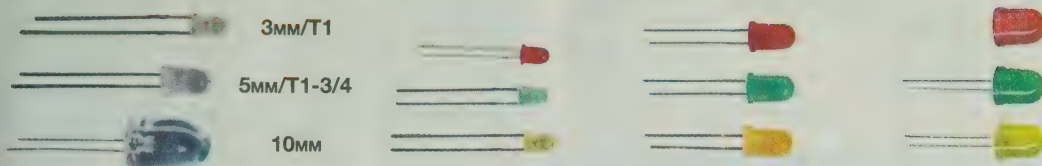
Solid Color: No Flash/Fade etc. RGB: Pseudo random flash as each LED follows a pre set flash, fade multi color sequence.



L: 5m WT: .1

STOCK #	DESC.	1EA
31985-OP	5m White Micro LED String	\$5.95
31986-OP	5m Red Micro LED String	\$5.95
31987-OP	5m Blue Micro LED String	\$5.95
31984-OP	5m RGB Random Flash LED String	\$9.95

GENERAL PURPOSE LEDs



WATER CLEAR

COLORED 3mm/T1

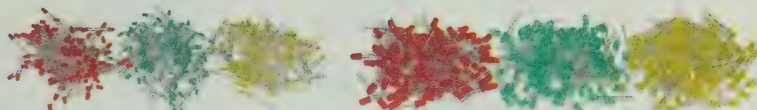
COLORED 5mm/T1-3/4

COLORED 10mm

Max Forward Current: 20mA Max Reverse Voltage: 5V

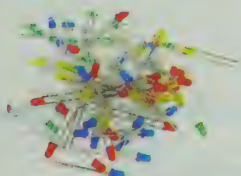
STOCK#	COLOR/WAVELENGTH	INTENSITY	SIZE	CASE	VF	1EA	10+EA
20206-OP	Red/655nm	.8mcd Typ	3mm/T1	Red Non Diffused	2.0V	\$0.09	\$0.07
20972-OP	Green/565nm	3mcd Typ	3mm/T1	Green Non Diffused	2.2V	\$0.10	\$0.08
20973-OP	Yellow/585nm	3mcd Typ	3mm/T1	Yellow Non Diffused	2.1V	\$0.10	\$0.08
14143-OP	Near UV/400nm	80mcd Typ	5mm/T1-3/4	Water Clear	3.6V	\$0.29	\$0.22
12568-OP	Blue/470nm	3900mcd Typ	5mm/T1-3/4	Water Clear	4.0V	\$0.34	\$0.25
17145-OP	White	10000 Typ	5mm/T1-3/4	Water Clear	3.2V	\$0.34	\$0.25
32606-OP	IR/850nm/30-45deg.	19mW/sr	5mm/T1-3/4	Water Clear	1.8V	\$0.10	----
32607-OP	IR/940nm/24-45deg.	7mW/sr	5mm/T1-3/4	Water Clear	1.5V	\$0.09	----
15109-OP	Red/635nm	3000mcd Typ	5mm/T1-3/4	Red Non Diffused	2.0V	\$0.25	\$0.20
17142-OP	YellowGreen/574nm	460mcdmin	5mm/T1-3/4	Water Clear	2.1V	\$0.18	\$0.16
17143-OP	Pure Green/525nm	5000mcd Min	5mm/T1-3/4	Water Clear	3.4V	\$0.39	\$0.30
20641-OP	Red/700nm	3.2mcd Typ	5mm/T1-3/4	Red Diffused	1.7V	\$0.10	\$0.09
24085-OP	Green/565nm	5mcd Typ	5mm/T1-3/4	Green Diffused	2.2V	\$0.15	\$0.14
24086-OP	Yellow/590nm	5mcd Typ	5mm/T1-3/4	Yellow Diffused	2.1V	\$0.15	\$0.14
18038-OP	Red/Orange/630	19mcd/Typ	5mm/T1-3/4	Red Diffused	2.0V	\$0.10	\$0.07
18039-OP	Red/Orange/630	20Typ	5mm/T1-3/4	Water Clear	2.0V	\$0.10	\$0.07
17140-OP	Red/Orange/630nm	1500mcd Min	5mm/T1-3/4	Water Clear	2.1V	\$0.18	\$0.16
15132-OP	Red/660nm	450mcd Typ	10mm	Red Diffused	1.8V	\$0.25	\$0.20
15133-OP	Green/568nm	300mcd Typ	10mm	Green Diffused	2.2V	\$0.30	\$0.25
15134-OP	Yellow/590nm	600mcd Typ	10mm	Yellow Diffused	2.1V	\$0.30	\$0.25
15415-OP	Cool White	15000mcd Typ	10mm	Water Clear	3.8V	\$0.15	----

BULK PACK LEDs 100PCS/PACK



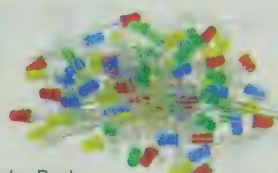
STOCK#	COLOR/WAVELENGTH	INTENSITY	SIZE	CASE	VF	VREV MAX	IF CONT.	WT	1PKG
15101-OP	Red/635nm	20mcd Typ	3mm	Red Diffused	1.8V	5V	20mA	.04	\$1.95
15102-OP	Green/568nm	10mcd Typ	3mm	Green Diffused	2.2V	5V	20mA	.04	\$1.95
15103-OP	Yellow/590nm	10mcd Typ	3mm	Yellow Diffused	2.1V	5V	20mA	.04	\$1.95
15104-OP	Blue/470nm	700mcd Typ	3mm	Blue Diffused	3.8V	5V	20mA	.04	\$2.95
15108-OP	Red/635nm	50 mcd Typ	5mm	Red Diffused	1.8V	5V	20mA	.05	\$1.95
15307-OP	White	4000/Min	5mm	White Diffused	3.0V	5V	20ma	.05	\$2.95
15308-OP	Green/568nm	5mcd Typ	5mm	Green Diffused	2.2V	5V	20mA	.05	\$1.95
15309-OP	Yellow/590nm	5mcd Typ	5mm	Yellow Diffused	2.1V	5V	20mA	.05	\$1.95
31363-OP	Blue/470nm	20mcd Typ	5mm	Blue Diffused	2.7V	5V	20mA	.05	\$3.95

3MM LED ASSORTMENT



3mm LED Combo Pack
20 pieces each of our 3mm LEDs for a total of 100 units.
Includes: Red, Green, Yellow, Blue & White
Max Forward Current: 20mA
Max Reverse Voltage: 5V

5MM LED ASSORTMENT



5mm LED Combo Pack
20 pieces each of our 5mm LEDs for a total of 100 units.
Includes: Red, Green, Yellow, Blue & White
Max Forward Current: 20mA
Max Reverse Voltage: 5V

STOCK #	DESC.	1EA	WT.	STOCK #	DESC.	1EA	WT.
32674-OP	100 Pcs. 3mm LED Assortment	\$2.95	.07	32066-OP	100 Pcs LED Assortment	\$2.95	.08

MINI LASER HEAD

<5mw, 635nm Red Laser Diode head used for aiming, alignment or other uses
3mm Aperure
0.8m Radians Divergence
3.0VDC operation, Forward current <40mA.
5V max Reverse Voltage.
6mm Dia. Brass Body, 2in Leads

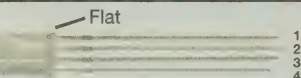
L: 15mm Dia: 6mm

WT: .001



STOCK #	DESC	1EA	10-EA
19566-LZ	Mini Red LASER Head	\$2.25	

5MM RGB LEDs



5mm (T1-3/4) Tri-Color Red/Green/Blue LED 4 leads. Transparent, diffused case. Common Anode (C/A) with separate Cathode lead for each color. 1" leads
Wavelength: R630/G525/B430nm,
Min. Output: R200/G300/B150mcd
Max Forward current 20mA continuous.
Max Forward Drop: R2.5/G4.5/B4.5V.
Max Reverse Voltage =5VDC.

WT: .001

STOCK #	DESC	1EA	10-EA
32602-OP	C/A 5mm Tri-Color LED	\$0.71	\$0.65

5MM RGB LEDs



5mm (T1-3/4) Tri-Color Red/Green/Blue LED 4 leads. Transparent, diffused case. Common Cathode (C/C) with separate Anode lead for each color. 1" leads
Wavelength: R630/G525/B430nm,
Min. output: R200/G300/B150mcd
Max forward current 20mA continuous.
Max Forward Drop: R2.5/G4.5/B4.5V.
Max reverse Voltage =5VDC.

WT: .001

STOCK #	DESC	1EA	10-EA
18605-OP	C/C 5mm Tri-Color LED	\$0.71	\$0.65

8MM RGB LEDs



8mm Tri-Color Red/Green/Blue LED. 4 leads, Transparent, diffused case. Available Common Anode (C/A) with separate Anode lead for each color or Common Cathode (C/C). 1" leads
Wavelength: R630/G515/B465nm,
Min. Output: R100/G800/B400mcd
Max Forward current 20mA continuous.
Max Forward Drop: R2.3/G3.3/B3.3V Max.
Max reverse Voltage =5VDC.

WT: .001

STOCK #	DESC	1EA	100-EA
31157-OP	C/C 8mm Tri-Color LED	\$1.49	\$1.19
31158-OP	C/A 8mm Tri-Color LED	\$1.49	\$1.19

LED MOUNTING CLIPS



Single piece black plastic mounting clips used to panel mount LEDs.

	OD: .22"	L: .2"	WT: .001
3mm			
5mm	OD: .30"	L: .26"	WT: .001
8mm	OD: .55"	L: .64	WT: .001
10mm	OD: .62"	L: .7	WT: .001

STOCK #	DESC	1EA	200-EA
31349-OP	3mm LED Mtg. Clips	\$0.15	\$0.13
20207-OP	5mm LED Mtg. Clips	\$0.10	\$0.09
31351-OP	8mm LED Mtg. Clips	\$0.20	\$0.17
31352-OP	10mm LED Mtg. Clips	\$0.20	\$0.17

5MM RED/GREEN LEDs

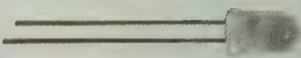


5mm (T1-3/4) Bi-Color Red/Green LED 3 leads. Transparent, diffused case. Common Cathode with separate Anode for each color. 1" Leads.
Wavelength: R635/G570nm
Min. output: R8/G5mcd
Max forward current: 20mA continuous.
Max Forward Drop: R2.5/G2.5V.
Max reverse Voltage: 5VDC.

WT: .001

STOCK #	DESC	1EA	10-EA
17136-OP	C/C 5mm Bi-Color LED	\$0.15	\$0.11

5MM RED/GREEN BI-POLAR LEDs

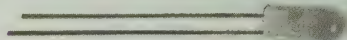


5mm (T1-3/4) Bi-Color, Bi-Polar, Red/Green 2 lead LED. Transparent, diffused case. Red & Green LEDs connected in Anti-Parallel. 1" Leads.
Wavelength: R635/G570nm
Min. output: R8/G5mcd
Max forward current 20mA continuous.
Max Forward Drop: R2.5/G2.5V.
Max reverse Voltage =5VDC.

WT: .001

STOCK #	DESC	1EA	10-EA
17135-OP	5mm Bi-Polar LED	\$0.15	\$0.11

NEAR UV LED



5mm (T1-3/4) Near Ultra Violet LED, Transparent, non-diffused, Water Clear case. 1" Leads.
Wavelength: 400nm
Output: 80mcd typ.
Max forward current 20mA continuous.
Forward Drop: 3.6V typ
Max reverse Voltage: 5VDC.

WT: .001

STOCK #	DESC	1EA	10-EA
14143-OP	5mm Near UV LED	\$0.29	\$0.22

850NM I/R LED



5mm (T1-3/4) IR LED with clear case & 5/8" leads. Used in security cameras and some remote controls.
Wavelength: 850nm (Faint visible Red)
Min. Output: 19mW/sr
Max Forward current 50mA continuous.
Max Forward Drop: 1.8V
Max Reverse Voltage: 5VDC
1/2 Angle: 30-45deg.

WT: .001

STOCK #	DESC	1EA	100-EA
32606-OP	850nm IR 5mm LED	\$0.10	

940NM I/R LED



5mm (T1-3/4) IR LED with clear case & 5/8" leads. Used in Remote controls.
Wavelength: 940nm
Min. Output: 7mW/sr
Max Forward current 20mA continuous.
Max Forward Drop: 1.5V
Max Reverse Voltage: 5VDC
1/2 Angle: 25-45deg.

WT: .001

STOCK #	DESC	1EA	100-EA
32607-OP	940nm IR 5mm LED	\$0.09	

CHROME LED MOUNTING CLIPS



Chrome metal mounting clips for 5mm LEDs. For panel mounting LEDs. Requires 5/16" hole

WT: .001

STOCK #	DESC	1EA	100-EA
30145-OP	Chrome Metal LED Mtg. Clips	\$0.29	

2" 5X7 RED LED MATRIX

Red, Anode Column OR Cathode Column, 5 X 7 Dot Matrix display. 660nm, 5-9 mcd, 20mA max forward current, 5V max reverse voltage, 1.8V (typ) forward drop. Gray face color, Side stackable. 0.1" pitch Pins at Top & Bottom

STOCK #	DESC.	1EA	10+EA
15124-OP	2" Col. Cathode Dot Matrix	\$2.95	\$2.50
15125-OP	2" Col. Anode Dot Matrix	\$2.95	\$2.50

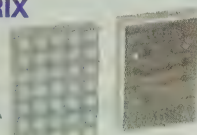


WT: .05

2" 5X7 GREEN LED MATRIX

Liteon LTP-2057AG
565nm Green LED Matrix.
Connected Anode Column
Fwd current/Dot: 100mA max. 13mA Ave.
Max reverse Volts: 5V
Fwd. Drop: 2.6V @ 20ma. Max/ 2.1V Typ.
Side stackable. 0.1" pitch Pins at Top & Bottom.

STOCK #	DESC.	1EA	25+EA
16786-OP	5X7 Green LED Matrix	\$3.95	\$2.95

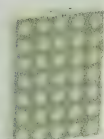


WT: .05

5X7 RED & GREEN LED MATRIX

Liteon LTP-2N57M LED Matrix.
Connected Anode Row/Cathode Column
Fwd current/Dot: 100mA max/13mA Ave
Max reverse Volts: 5V
Fwd. Drop: 2.6V @ 20ma Max
2.1V Green/2.0V Red Typ.
Two color: Red/Orange (630nm) & Green (565nm) in separate Row/column matrix.
Side stackable, 0.1" pitch Pins

STOCK #	DESC.	1EA	12+EA
18459-OP	5X7 R/G LED Matrix	\$3.50	\$2.95

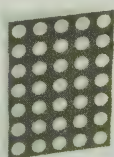


WT: .05

4" DOT MATRIX DISPLAY

Red, AlGaAs, Anode Row, Cathode Column, 5 X 7 Dot Matrix display. 660nm, 10000 mcd, 100mA max, 20mA typ. forward current, 10V max reverse voltage, 4.8V (typ) forward drop. Black face color, Edge Stackable.

STOCK #	DESC.	1EA	12+EA
18460-OP	4" Red 5X7 Dot Matrix Display	\$7.95	



WT: .22

ELECTROLUMINESCENT WIRE

Bright 2.3mm dia. Electroluminescent Wire with controller. Emits light full 360 degrees throughout its entire length. EL Wire is Non-Toxic, durable, and weather resistant (Not Waterproof).

3 modes: Steady, Slow Flash (~1/sec) or Fast Flash. Black plastic case contains driver and 2 "AA" batteries (NOT included).

L: 9ft. T: 2.3mm WT: .12

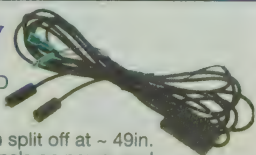
STOCK #	DESC.	1EA
33430-OP	Orange E/L Wire & Controller	\$8.95
33431-OP	Red E/L Wire & Controller	\$8.95
33432-OP	Green E/L Wire & Controller	\$8.95
33433-OP	Blue E/L Wire & Controller	\$8.95



12V LED ASSEMBLY

Prewired assembly with 2 LED heads with 3 cool white LEDs in each. Operates on 12VAC or DC @ 60mA. 10ft. cable with split off at ~ 49in. Two .250" Quick connect terminals on power end.

STOCK #	DESC.	1EA
32757-OP	12V White LED Assembly	\$3.95

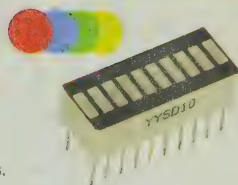


WT: .28

10 SEGMENT LED BARGRAPH

10 LED Bargraph displays.
0.1in lead pitch X 0.3in Wide.
End stackable for larger displays.
All LEDs are independent.
Forward Current: 20ma
Forward Voltage Drop: ~2VDC Red/Yellow/Green/~2.2V Blue
Max Reverse Voltage: 5VDC
Pins 1-10: Anodes
Pins11-20: Cathodes

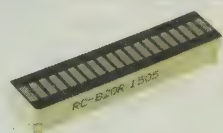
L: 25.4mm	W: 10mm	H: 8mm O/A	WT: .004
STOCK #	DESC.	1EA	
32253-OP	10 Red LED Bargraph		\$1.75
32325-OP	10 Blue LED Bargraph		\$1.75
32326-OP	10 Green LED Bargraph		\$1.75
32327-OP	10 Yellow LED Bargraph		\$1.75



20 SEGMENT LED BARGRAPH

20 Red LED Bargraph display.
0.1in lead pitch X 0.3in Wide.
End stackable for larger displays. All LEDs are independent.
Forward Current: 20ma
Forward Voltage Drop: ~2VDC
Max Reverse Voltage: 5VDC
Pins 1-20: Cathodes
Pins 21-40: Anodes

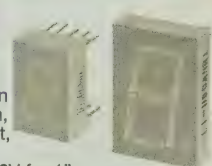
L: 50.8mm	W: 10mm	H: 8mm O/A	WT: .008
STOCK #	DESC.		1EA
32324-OP	20 Red LED Bargraph		\$2.95



7 SEGMENT DISPLAYS

Red, Common Anode OR Common Cathode 7 segment display, 660nm, 3-4.5mcd, 20mA max forward current, 5V max reverse voltage.
Typ. Forward Drop: 1.8V for .5in. /3.6V for 1".
Gray face color

STOCK #	DESC.	1EA	10+EA
15119-OP	.5" Com. Cath. Display	\$1.30	\$1.09
15120-OP	1" Com. Anode Display	\$0.95	\$0.89
15121-OP	1" Com. Cath. Display	\$0.95	\$0.89



WT: .02

ALPHA-NUMERIC DISPLAYS

Red, 2 character, multiplexed, 16 segment + Decimal Points display. 0.54in. Character Height. 660nm Red, 2.5-5mcd, 20mA max forward current, 5V max reverse voltage, 1.8V (typ) forward drop. End Stackable.

W: 1"	H: 13/16"	D: 5/16" Body	WT: .01
STOCK #	DESC.		1EA
15128-OP	Com.-Anode Alpha-Numeric Display		\$1.95
15129-OP	Com.-Cathode Alpha-Numeric Display		\$1.95



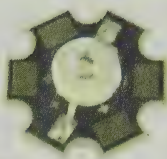
MULTI DIGIT LED DISPLAY

MFG: ROHM
P/N: LS-2074M2G
Custom display with 7 common Anode, 7 segment Red LED digits and 7 Independent rectangular LEDs.
Max Reverse Voltage: 5VDC, Max Forward Current: 20mA

Max Reverse Voltage: 5VDC, Max Forward Current: 20mA			
W: 1-7/16"	H: 13/16"	T: 1/4" Body	WT: .007
STOCK #	DESC.	1EA	
19391-OP	Multi Digit LED Display	\$1.25	



1W STAR LEDS



REQUIRES SERIES RESISTOR & HEATSINKING

High Brightness 1Watt LEDs.

Max forward current 350mA continuous.

5V max Reverse Voltage. 120deg. View angle.

Green 60lm, 520-530nm, 3.3VDC Typ. Forward Voltage

Yellow 60lm, 580-590nm, 2.1VDC Typ. Forward Voltage

Cool White 90lm, 6000-6500K, 3.4VDC Typ. Forward Voltage

Warm White 90lm, 3000-4500, 3.4VDC Typ. Forward Voltage

Blue 20lm, 460-465nm, 3.4VDC Typ. Forward voltage

SURFACE MOUNT PACKAGE

Dia: 20mm H: 6.8mm WT: .003

STOCK #	DESC.	TEA
19611-OP	1W SMD Green 60lm LED	\$1.95
19606-OP	1W SMD Warm White 90lm LED	\$1.95
19585-OP	1W SMD Cool White 90lm LED	\$1.95
19586-OP	1W SMD Blue 20lm LED	\$1.95

10 WATT LEDS



REQUIRES SERIES RESISTOR & HEATSINKING

Case Temp. <45C max.

10W High Brightness

Single Colors: 5V max Reverse Voltage.

Forward Current 900mA max

RED: Output: 350 lm, 620-625nm

Forward Voltage Drop: 6.7-6.8VDC

GREEN: Output: 600 lm, 520-525nm

Forward Voltage Drop: 10-11VDC

BLUE: Output: 200 lm, 460-465nm

Forward Voltage Drop: 10-11VDC

WHITE: Output: 1000 lm, Color Temp: 2800-3500

Forward Voltage Drop: 9-10VDC

RGB: COMMON ANODE

Wavelength: R625/G525/B460nm,

Min. Output: RGB: 350lm,

Each Color LED: R80/G150/B30 lm

Max Forward Current: 350mA cont. Single Color

Max Forward current: 1000mA total 3 colors

Forward Drop: R6-7V/G10-11V/B10-11V.

Max reverse Voltage: 15VDC

ALUMINUM BASE SURFACE MOUNT PACKAGE

140-160deg. Viewing angle.

SQ: 20mm W: 23.7mm H: 3.5mm WT: .011

STOCK #	DESC.	TEA
31515-OP	Red 10W SMD LED	\$3.95
31516-OP	Green 10W SMD LED	\$3.95
31517-OP	Blue 10W SMD LED	\$2.95
31183-OP	Warm White SMD LED	\$2.95
31518-OP	RGB 10W SMD LED	\$3.95

10W UV LEDS



DO NOT STARE AT THESE LEDS

Some Output is not Visible

REQUIRES SERIES RESISTOR & HEATSINKING

Case Temp. <45C max.

10Watt Ultraviolet LEDs. Used for Aquariums, Anti-Counter-

feiting, Grow Lights, Curing epoxies and scientific equipment.

Forward Voltage Drop: 9-12VDC

Forward Current: 1A max

Max Reverse Voltage: 5V

View Angle: 120deg.

ALUMINUM BASE SURFACE MOUNT PACKAGE

SQ: 20mm H: 3.5mm WT: .011

STOCK #	DESC.	TEA
32614-OP	365-367nm 10W UV LED	\$49.95
32615-OP	375-380nm 10W UV LED	\$29.95
32616-OP	385-390nm 10W UV LED	\$14.95
32617-OP	395-400nm 10W UV LED	\$14.95
32618-OP	410-415nm 10W UV LED	\$10.95
32619-OP	420-430nm 10W UV LED	\$9.95

10W IR LEDS



DO NOT STARE AT THESE LEDS

Some Output is not Visible

REQUIRES SERIES RESISTOR & HEATSINKING

Case Temp. <45C max.

10Watt Infrared LEDs. Used for Aquariums, Grow Lights and other scientific equipment

Forward Voltage Drop: 4-6VDC

Forward Current: 1A max

Max Reverse Voltage: 5V

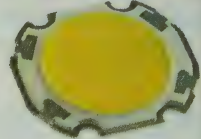
View Angle: 120deg.

ALUMINUM BASE SURFACE MOUNT PACKAGE

SQ: 20mm H: 3.5mm WT: .011

STOCK #	DESC.	TEA
32621-OP	730nm 10W IR LED	\$22.95
32622-OP	850nm 10W IR LED	\$10.95
32623-OP	940nm 10W IR LED	\$9.95

HIGH LUMEN LEDS



REQUIRES SERIES RESISTOR & HEATSINKING

Case Temp. <45C max.

High Brightness, 3000-3500K Warm White LEDs.

5V max Reverse Voltage. 160deg. View angle.

3W, >250 lm, 9-12 VDC Forward Drop, 300mA

5W, >400 lm, 15-18VDC Forward Drop, 300mA

7W, >500 lm, 21-25VDC Forward Drop, 300mA

ALUMINUM BASE SURFACE MOUNT PACKAGE

L: 27.3mm W: 23.7mm H: 2mm WT: .03

STOCK #	DESC.	TEA
32075-OP	3W SMD White 250lm LED	\$1.95
32076-OP	5W SMD White 400lm LED	\$2.49
32077-OP	7W SMD White 500lm LED	\$2.95

HIGH LUMEN LEDS



REQUIRES SERIES RESISTOR & HEATSINKING

Case Temp. <45C max.

High Brightness 6000-6500 Cool White LEDs.

5V max Reverse Voltage. 160deg. View angle.

10W, 900-1000 lm, 10-11VDC, 1000mA

20W, 1800 lm, 32-34VDC, 700mA

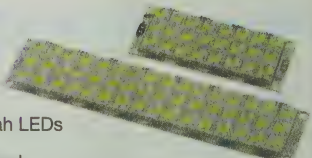
30W, 2600 lm, 32-34VDC, 1000mA

ALUMINUM BASE SURFACE MOUNT PACKAGE

SQ: 20mm H: 3.5mm WT: .011

STOCK #	DESC.	TEA
31325-OP	10W SMD White 1000lm LED	\$2.95
31326-OP	20W SMD White 160lm LED	\$7.95
31327-OP	30W SMD White 2600lm LED	\$9.95

HIGH OUTPUT LED BOARDS



24/48 Cool White Piranah LEDs

mounted on a board.

< 90 lumens 24 LED board.

<180 lumens 48 LED board

120 deg. beam angle.

Voltage: 12VDC max.

Current: <.3A /24 LEDs: <.6A/48LEDs

Color Temp: ~5000 to 6500

L/24: 3-15/16" W: 1-1/8" H: 1/2" WT: .03

L/48: 5-1/2" W: 1-1/8" H: 1/2" WT: .06

STOCK #	DESC.	TEA
32035-OP	24 White LED Board	\$4.95
32036-OP	48 White LED Board	\$9.95

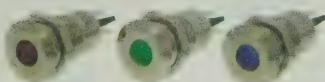
BI-PIN G-4 LED MODULES

G-4 Bi-Pin lamp module features 12 #5050 Warm or Cool White LEDs mounted on a circular board made for installation in fixtures. Side mounted G-4 Pins for connection.
Voltage: 12VAC/DC.
Current: ~100A @ 12VDC
Light Output: ~110 lumens
Color Temp: Warm:2800-3500 Cool: 5500-6500
120 deg. beam angle.



DIA:	1-3/16" + Pins	T:	5/16"	WT:	.01
STOCK #	DESC.	1EA			
33410-OP	G-4 Warm White LED Module	\$1.95			
33411-OP	G-4 Cool White LED Module	\$1.95			

12V PANEL INDICATORS

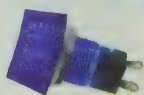


12V AC/DC LED Panel indicators with metal case. Polished beveled metal round top. Solder terminals.

Mtg. Hole: 10mm

DIA:	1/2"	L:	1"	WT:	.01
STOCK #	DESC.	1EA			
32750-LA	Red 12V Panel Lamp	\$2.49			
32751-LA	Green 12V Panel Lamp	\$2.49			
32752-LA	Blue 12V Panel Lamp	\$2.49			

12V PANEL INDICATORS



Blue Panel lamps with Non replaceable bulb rated 12V. Tapered square top (.6"sq. X .5" tall). Solder terminals. Mounts in round hole

Mtg. Hole:	.6"	L:	1-1/2"	WT:	.016
STOCK #	DESC.	1EA	10+EA		
14183-LA	12V Blue Panel Lamp	\$0.95	\$0.89		

12V LED LAMPS



LED Panel lamps with Internal resistor for 20mA @12VDC, 20deg. beam angle. Water clear, non diffused case. 8in. leads

DIA.:	5mm	WT:	.005
STOCK #	DESC.	1EA	
30124-LA	Red 4Kmcld LED Lamp	\$0.75	
30125-LA	Green 12Kmcld LED Lamp	\$0.75	
30126-LA	Yellow 4Kmcld LED Lamp	\$0.75	
30127-LA	Blue 5Kmcld LED Lamp	\$0.75	
30128-LA	White 16Kmcld LED Lamp	\$0.75	

22MM 12V PANEL INDICATORS



Panel mounted, LED lighted, industrial indicators rated 12VA/DC +-20%, <20mA. Shielded screw terminals. Mounts in 22mm Hole. CE listed.

DIA:	1-1/8in.	L:	2-5/8in.	WT:	.05
STOCK #	DESC.	1EA			
31087-LE	12V Red Panel Indicator	\$2.95			
31088-LE	12V Green Panel Indicator	\$2.95			
31089-LE	12V Yellow Panel Indicator	\$2.95			

MINI 6V LAMPS



Only 3/16" Dia. X 7/16". Rated 6V @ 70mA, 10" red & black leads. Many uses for hobbiests! Use in model cars. Sold in packs of 2.

L:	7/16"	DIA:	3/16"	WT:	.001
STOCK #	DESC.	1PK			
26695-LA	Two 6V Mini Lamps	\$0.80			

72 LUMEN LED MODULE

12V, +-5V DC input Only.



White LED light engine features: 4 high lumen LEDs in module. 120 deg. beam angle. Dual 1.5" leads for connecting multiple Modules in parallel. CE /RoHS Current: 80mA (.080A)/module Color Temp:~5000 to 6500 72 Lumens/Module Steel case, Peel-n-stick backer, clear epoxy potting.

L:	1-7/16"	W:	1-3/4"	T:	3/16"	WT:	.025
STOCK #	DESC.	1EA					
19445-OP	White 72 lm Light Module	\$2.95					

36 LUMEN LED MODULE

12V, +-5V DC input Only.



White LED light engine features: 2 high lumen LEDs. 120 deg. beam angle. Dual 1.0" leads for connecting multiple Modules in parallel. CE /RoHS Current: 40mA (.040A)/module Color Temp:~5000 to 6500 36Lumens/Module White Plastic case, Peel-n-stick backer, clear epoxy potting.

L:	1-7/8"	W:	5/8"	T:	3/8"	WT:	.02
STOCK #	DESC.	1EA					
31368-OP	White 36 lm Light Module	\$0.99					

12W LED GENERAL LIGHTING BULB

Self contained LED replacement lamp.

Standard base

Input: 110VAC, 60Hz.

Light Output: ~60W equivalent

Power: ~12W

Color Temp: ~6000 (Cool White)

View Angle: ~200deg.

NOTE: Indoor Only, Not for Dimmers or totally enclosed fixtures.



L:	6"	DIA:	3"	WT:	.16
STOCK #	DESC.	1EA			
32814-LA	12W 110VAC LED Bulb	\$4.95			

15W LED GENERAL LIGHTING BULB

Self contained LED replacement lamp.

Standard base

Input: 110VAC, 60Hz.

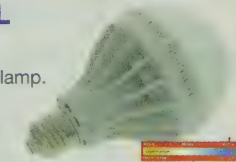
Light Output: ~75W equivalent

Power: ~15W

Color Temp: ~6400 (Cool White)

View Angle: ~200deg.

NOTE: Indoor Only, Not for Dimmers or totally enclosed fixtures.



L:	5-1/2"	DIA:	3-1/2"	WT:	.22
STOCK #	DESC.	1EA			
32815-LA	15W 110VAC LED Bulb	\$5.95			

3W 12V LED BULB

High performance LED spot light. Cool

White 23 degree narrow flood in a MR16

Base. Equivalent to a 30W halogen but with

10 times the service life

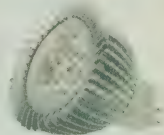
Input 12VAC/DC @ <200mA

Lumens:> 175

Color Temp: ~5700K

40Khr. Average Life until 70% lumen output @25C

Indoor use only, not for total enclosed fixtures



DIA:	2"	L:	2"	WT:	.1
STOCK #	DESC.	1EA			
31975-OP	3W MR-16 LED Lamp	\$3.95			

MINI LAMPS



Grain-of-Wheat" lamps, Only 1/8"dia X 1/4". 10" leads. Ideal for hobbiests! Use in model cars, boats, trains etc.

L:	1/4" (Bulb)	DIA:	1/8"	WT:	.001
STOCK #	DESC.	1EA	10+EA		
28980-LA	1.5V Mini Lamp	\$0.59	\$0.49		
28981-LA	3.0V Mini Lamp	\$0.59	\$0.49		
28982-LA	6.0V Mini Lamp	\$0.59	\$0.49		
28983-LA	12V Mini Lamp	\$0.59	\$0.49		

1A RECTIFIER DIODES



1N4000 series 1 Amp Axial diodes. DO-04 Case
SOLD IN PACKS OF 10

WT: .01

STOCK #	AMP.	DESC.	1PK	10PK EA
32901-DI	50	1N4001	\$0.50	\$0.40
32902-DI	100	1N4002	\$0.50	\$0.40
32903-DI	200	1N4003	\$0.50	\$0.40
32904-DI	400	1N4004	\$0.50	\$0.40
32905-DI	600	1N4005	\$0.50	\$0.40
32906-DI	800	1N4006	\$0.50	\$0.40
32907-DI	1000	1N4007	\$0.50	\$0.40

3A RECTIFIER DIODES



1N5400 series 3 Amp Axial diodes. DO-201AD Case
SOLD IN PACKS OF 5

DIA: .375"

WT: .01

STOCK #	PIV	DESC.	1PK	10PK EA
32911-DI	50	1N5400	\$0.99	\$0.89
32912-DI	100	1N5401	\$0.99	\$0.89
32913-DI	200	1N5402	\$0.99	\$0.89
32915-DI	400	1N5404	\$0.99	\$0.89
32916-DI	500	1N5405	\$0.99	\$0.89
32917-DI	600	1N5406	\$0.99	\$0.89
32918-DI	800	1N5407	\$0.99	\$0.89
32919-DI	1000	1N5408	\$0.99	\$0.89

6A RECTIFIER DIODES



P600 series 6 Amp Axial diodes. 1" leads
SOLD AS SINGLE DIODES

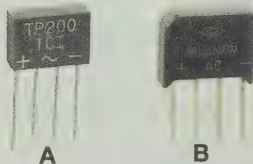
Dia: .39"

WT: .002

STOCK #	DESC.	PIV	1EA	200EA	500+EA
25218-DI	P600A	50	\$0.54	\$0.39	\$0.35
25219-DI	P600B	100	\$0.60	\$0.43	\$0.38
25220-DI	P600D	200	\$0.65	\$0.47	\$0.42
25221-DI	P600G	400	\$0.70	\$0.51	\$0.45
25222-DI	P600J	600	\$0.76	\$0.55	\$0.49
25224-DI	P600M	1000	\$0.76	\$0.55	\$0.49

IN-LINE BRIDGES

WIRE LEADS



WT: .001

STOCK #	AMP.	PIV	FIG.	1EA	25+EA
25234-BR	2	50	A	\$0.44	\$0.39
25235-BR	2	400	A	\$0.54	\$0.48
25236-BR	2	1000	A	\$0.62	\$0.55
25237-BR	4	50	B	\$0.75	\$0.67
25238-BR	4	200	B	\$0.88	\$0.79
25239-BR	4	400	B	\$0.98	\$0.88
25203-BR	4	1000	B	\$1.49	\$1.34

6A SQ. BRIDGE

Wire Leads for PC Board Mtg



SQ: .6"

WT: .001

STOCK #	PIV	DESC.	1EA	25+EA
25241-BR	50	6A Bridge	\$0.49	\$0.79
25243-BR	1000	6A Bridge	\$1.15	\$1.21

BRIDGE RECTIFIERS

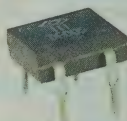


Square package,
.250" Quick connect terminals.

WT: 15-30A=.05/50A=.1

STOCK #	AMP.	PIV	1EA	25+EA
25244-BR	15	100	\$1.91	\$1.70
25245-BR	15	400	\$2.85	\$2.38
25246-BR	15	1000	\$3.44	\$3.09
25247-BR	25	50	\$1.95	\$1.75
25248-BR	25	400	\$2.70	\$2.43
25249-BR	25	1000	\$3.49	\$3.14
25250-BR	35	50	\$2.25	\$1.99
25251-BR	35	400	\$2.90	\$2.69
25252-BR	35	1000	\$3.59	\$3.59
25254-BR	50	400	\$5.75	\$4.95
25255-BR	50	1000	\$6.45	\$5.95

1A MINI DIP BRIDGES



4 pin Mini DIP Package for socket or PC
board mounting

WT: .001

STOCK #	PIV	DESC.	1EA	50+EA
25225-BR	50	1A DIP Bridge	\$0.39	\$0.35
25227-BR	400	1A DIP Bridge	\$0.44	\$0.39
25228-BR	800	1A DIP Bridge	\$0.50	\$0.45

1W ZENER DIODE KIT

Handy Service Kit of 1W Zener Diodes.
14 Values, 5 of each, 70 Total
3.3V 7.5V 12V 27V
4.7V 8.2V 15V 30V
5.1V 9.1V 18V
6.2V 10V 24V

WT: .06

STOCK #	DESC.	1EA
33027-DI	70pc. 1W Zener Diode Kit	\$4.95

1N34A DETECTOR DIODE

Sold in Pack of 10
Axial lead, Germanium, Point Contact diode used in AM/FM/
TV detectors & RF probes.
Max Reverse Voltage: 45VDC
Max Forward current: 150mA
Max Forward Voltage: <1.0

WT: .001

STOCK #	DESC.	1EA
32603-DI	10pc of 1N34A Detector Diode	\$2.95

1N4148 SWITCHING DIODE

Silicon, small signal logic (switching) diodes.
Max Reverse Voltage: 100V
Max Forward Current: 200mA
Max Forward Voltage Drop: 1V
Reverse Recovery Time: 4ns

SOLD IN PACKS OF 10

WT: .01

STOCK #	DESC.	1PK	10PK EA
32897-DI	10pc. 1N4148 Switching Diode	\$0.50	\$0.40

1N914 SWITCHING DIODE

Silicon, small signal logic (switching) diodes.
Max Reverse Voltage: 75V
Max Forward Current: 300mA
Max Forward Voltage Drop: 1V
Reverse Recovery Time: 4ns

SOLD IN PACKS OF 10

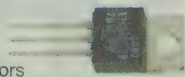
WT: .01

STOCK #	DESC.	1PK	10PK EA
32896-DI	10pc. 1N914 Switching Diode	\$0.50	\$0.40

VOLTAGE REGULATORS

TO-220 CASE

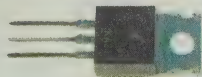
32VDC Max input Voltage
1Amp Output, three terminal regulators



WT: .001

STOCK #	IND. #	OUT V	1EA	25+EA
20359-RG	7805/340-5	+5	\$0.50	\$0.35
20366-RG	7905	-5	\$0.50	\$0.35
31223-RG	7806	+6	\$0.50	\$0.35
31224-RG	7809	+9	\$0.50	\$0.35
20361-RG	7812	+12	\$0.50	\$0.35
20367-RG	7912	-12	\$0.50	\$0.35
20364-RG	7824	+24	\$0.50	\$0.35

LM-317 ADJ. + VOLTAGE REGULATOR

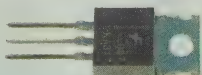


One of the most popular Adjustable regulator of all time. Rated: 3-37VDC input; 1.2-35V adjustable output at 1A.

WT: .05

STOCK #	DESC.	1EA	25+EA
20365-RG	LM317 Adj. + Regulator	\$0.75	\$0.49

LM-337 ADJ. -VOLTAGE REGULATOR



One of the most popular Negative Adjustable regulator of all time. Rated: -3 to -37VDC input; -1.2 to -35V adjustable output at 1.5A.

WT: .05

STOCK #	DESC.	1EA	25+EA
31191-RG	LM337 Adj. - Regulator	\$0.75	

78L05 +5V REGULATOR

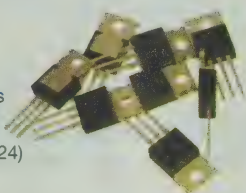


3 lead TO-92 mini regulator Rated: 7-30VDC input; 5V Fixed output at .1A

WT: .05

STOCK #	DESC.	1EA	25+EA
31201-RG	78L05+5V Regulator	\$0.15	

VOLTAGE REGULATOR KIT



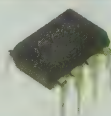
Handy 8 piece kit of 78xx series
Positive Voltage Regulators.
TO-220 Case
Max. Input: 30VDC (40V for 7824)
Min Input: Vin= Vout + 2V
Rated 1A

Includes: 1ea.	7805 (5V)	7806 (6V)	7808 (8V)	7809 (9V)
	7812 (12V)	7815 (15V)	7818 (18V)	7824 (24V)

WT: .04

STOCK #	DESC.	1EA	25+EA
32375-RG8pc.	kit of Positive Voltage Regulators	\$2.95	

NE555 TIMER IC

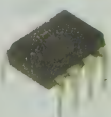


Work horse of all timing circuits.
8 Pin Mini DIP.

WT: .001

STOCK #	DESC.	1EA	25+EA
22350-IC	NE555 Timer IC	\$0.50	\$0.42

741CN OP-AMP



The ever popular 741CN general
purpose Op-Amp.
8 pin plastic Mini DIP package.

WT: .001

STOCK #	DESC.	1EA	25+EA
32608-IC	741Op-Amp IC	\$0.25	

2N/PN2222 TRANSISTOR



NPN General purpose transistor.
TO-92/226 plastic case.
BVcbo=60V, BVceo=30V, BVebo=5V
DCGain=100-300@Vce10V/Ic=150mA
Ic max=.8A Pc=625mW

WT: .001

STOCK #	DESC.	1EA	100EA
31229-QT	2N2222 Plastic Transistor	\$0.19	\$0.12

2N3906 TRANSISTOR



PNP General purpose, small signal amplifier
TO-226 plastic case. BVcbo: -40V, BVceo: -40V, BVebo: -5V
Ic:200mA Max/PD 600mW

WT: .001

STOCK #	DESC.	1EA	100EA	2000+EA
22224-QT	2N3906	\$0.25	\$0.12	\$0.06

TRANSISTOR ASSORTMENT

Assortment of commonly used NPN and
PNP TO-92 case transistors
360 Total Pcs. 20pcs. each of:
2N2222 2N3904 2N3906 2N5551

2N5401	2N5401	2N5401	2N5401	2N5401	2N5401
8S050	8S550	9S012	9S013	9S014	9S015
A42	A92	A733	A1015	C945	C1815

WT: .15

STOCK #	DESC.	1EA	25+EA
32376-QT	TO-92 Transistor Assortment	\$8.95	

2N3055 POWER TRANSISTOR



General purpose, NPN Power Transistor.
100BVcbo, 60BVceo, 15A Ic Max. TO-204AA (TO-3) case. Complement to the 2N2955

WT: .04

STOCK #	DESC.	1EA	25+EA
31093-QT	2N3055 NPN 115W Power Transistor	\$0.99	

MJ/2N2955 POWER TRANSISTOR

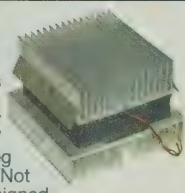


General purpose, PNP Power Transistor.
100BVcbo, 60BVceo, 15A Ic Max.
TO-204AA (TO-3) case. Complement to the 2N3055.

WT: .04

STOCK #	DESC.	1EA	25+EA
32611-QT	2N2955 PNP 115W Power Transistor	\$0.99	

THERMOELECTRIC ASSEMBLY

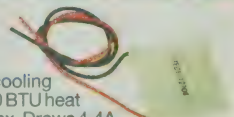


Peltier Effect cooling assembly. Contains
module with 127 Pairs of couples mounted
to a heatsink assembly. Optimized for
12VDC. 65-70W (~170 BTU). 8A max, 16V
max, Draws 6A @ 12VDC. Approx. 50Deg
"C" temp. difference with hot side fan (Not
included) and insulated cold side. Designed
for recreational coolers.

L: 5" W: 5-1/8" T: 3-3/4" WT: 2.6

STOCK #	DESC.	1EA	25+EA
15312-PM	Peltier Cooler Unit	\$29.95	\$27.95

THERMOELECTRIC COOLING MODULE



127 couple, edge sealed Peltier cooling
modules optimized for 12VDC. ~90 BTU heat
pumping possible. 6A max, 16V max, Draws 4.4A
@ 12VDC. 10in. Leads.

L: 1-9/16" W: 1-9/16" T: .15 WT: .05

STOCK #	DESC.	1EA	25+EA
30207-PM	12V 50-60W Peltier Module	\$4.98	

BACKLIT DMM

3-1/2 digit, 15mm (.6") char. Ht. LCD digital multimeter. Features HOLD Button, backlight button (~5sec. on). With 9V battery, test leads & instructions. Fuse & Diode protected (not 10A range). Yellow protective Boot. CE listed. Cat II use. Not Auto Turnoff

DC VOLTS: 200mV, 2, 20, 200, 600, Accuracy .8% + 2 LS digit

DC CURRENT: 200uA, 2, 20, 200mA, 10A, Accuracy 1.5% + 2 LS digit, 250V on 200mV 600V Max

AC VOLTS: 200, 600V, Accuracy 1.2% + 10 LS digit, 40-400Hz. Ave. Responding, 600V RMS/DC Max

RESISTANCE 200, 2K, 20K, 200K, 2M Ohm, Accuracy 1% + 2LS Digit, 250V RMS Max.

DIODE & TRANSISTOR TEST

Diode Displays forward drop
hFE 0-1000 Ib = 10uA/Vce=3V

H: 5-3/4" W: 2-7/8" D: 1-1/2" WT: .8

STOCK #	DESC.	1EA
14213-TE	Mini Deluxe Backlit DMM	\$14.95



MINI MULTIMETER

Light weight 6 function, Backlit, 3-1/2" digit hand held meter with 1/2" LCD display. Includes 9V battery, test leads, instructions & Protective Boot. Fuse Overload protection. CE listed; IEC 1010 CatII-600V Compliant

SPECIFICATIONS

DC VOLTS & CURRENT

VOLTS: .2, 2, 20, 200, 500V
CURRENT: 200uA, 200mA, 10A (10A Unfused)

Accuracy: .5% + 2 LS digit on 200mV
.8% + 2 LS Digit 500VDC

1% + 2 LS Digit (10% 10A) Current

AC VOLTS (Ave responding Calibrated in RMS Sine)
VOLTS: 200, 750V

Accuracy: 1.2% + 10 LS Digit

RESISTANCE

Ranges: 200, 2K, 20K, 200K, 20M

Accuracy: .8% + 2 LS Digit (10% +-10LSD on 20M)

MISCELLANEOUS

Battery Test: 1.5V/ 30uA, 9V/1.8KOhm, 12V/ 240uA

Diode Test: 2.8 VDC open circuit

L: 5-1/4" W: 3" T: 1-1/2" WT: .62

STOCK #	DESC.	1EA
32046-TE	Pocket Multi Meter	\$17.95



UNIVERSAL VOLTAGE TESTER

MFG: TEMA
P/N: 72-6793

Dual probe voltage checker uses a series of LED light to indicate range of voltage. Current burden: <30mA, Test time= 30sec, Freq. range: DC-100Hz, Display Volts: 6, 12, 24, 50, 120, 220, 400 AC/DC

L: 7-7/8" WT: .26

STOCK #	DESC.	1EA
30054-TE	Universal Volt Checker	\$12.95



DIGITAL WIND SPEED METER

Hand held multi-scale Anemometer reads Wind Speed & Temperature.

Ranges:
0-30m/sec,
0-5680 ft/min
0-90 km/hr
0-65 mi/hr,
0-55 knots

Accuracy: +5%

Temperature:

"C": -10 to 45deg.

"F": 14 to 113deg.

H: 3.15" W: 2.52" D: 2.13" WT: .3

STOCK #	DESC.	1EA
33409-TE	Digital Anemometer	\$19.95



PLUG-IN DIGITAL V/A/W METER

The power monitor is a plug-in meter used to monitor the electrical use of anything plugged into it. Input your utility rate and meter will Calculate your electrical expenses for up to 9999 days. 7 modes that you can determine the parameters of your utility or your back-up systems.

3 Line LCD Display

Line 1: Cumulative Time (Run Time)

Lines 2&3 change with Mode (W/KWH/A/V etc.)

Built in battery retains data when unplugged.

SPECIFICATIONS

Operating Voltage: 110-130VAC
Current: 15A
Power: 1800W
Overload Alarm: 3680W
Burden: (power used) 0.5W
Accuracy: +-3%
Category: Cat II
Display Range: 4 digits
Voltage: 0-9999V
Current: 0.000-15.00A
Active Power: 0.000-9999W
Frequency: 0-9999
Power Factor (PF): 0.0-1.00
Elapsed Load Run Time: 0.0-99999
Power Consumed: 0.00-9999KWHr.

H: 6-1/4" W: 2-7/8" T: 1-3/4" WT: .5

STOCK #	DESC.	1EA
32039-TE	Power Monitor Meter	\$19.95



PISTOL GRIP I/R THERMOMETER

Single hand, Pistol grip type, Non-contact infrared digital thermometer with LASER pointer, Auto Turn Off, selectable "F" or "C" display, LED Backlight. Includes soft sided woven case. CE listed.

Display: 3-1/2 digit Backlit LCD

I/R Emission Range: 5-14um

Range: -58 "F" to +680 "F" (-50 "C" to 360 "C")

Selectable "F" or "C"

Accuracy: +- 2%/2 deg. "C"

Resolution: .1Deg.

Sample Rate: approx. 2/Sec while holding Trigger. Single read per trigger pull

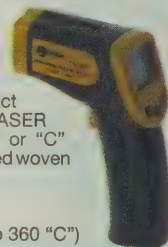
Distance Factor: 12/1 (at 12" spot size is 1.5")

Emissivity Factor: fixed @ .95

Power: 9 VDC battery

H: 6-1/8" W: 1-1/2" H: 3-1/4" WT: .5

STOCK #	DESC.	1EA
32045-TE	Infrared Digital Thermometer	\$24.95



LASER TACHOMETER

Hand held photoreflexive tachometer uses LASER beam. 5 digit LCD display measures RPM from 2.5-99,999.

Resolution: .1RPM/2.5-999, 1RPM/above 1000. Features Hi/Lo/ Last reading memory. Powered by 4 "AA" cells (Not Included). Requires reflective area on a non reflective surface. Includes soft storage pouch.

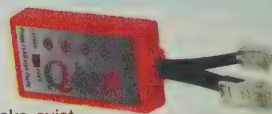
L: 6-1/4" W: 2-7/8" T: 1-1/2" WT: 1.52

STOCK #	DESC.	1EA
12234-TE	LASER Tachometer	\$24.95



PHONE LINE CHECKER

Phone/LAN line tester checks existing wiring for connection to LAN or Phone systems. Test for USOC/568A/B, Phone lines connected to RJ45 jacks, reversed/ open wiring, ect.



H: 3.15" W: 2.52" D: 2.13" WT: .3

STOCK #	DESC.	1EA
19130-TE	Phone Line Checker	\$7.95

NEAR FIELD EMF METER

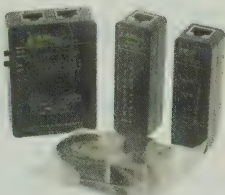
Handheld wide band Microwave Field strength meter. Designed to detect and measure fields emanated from Cell base stations & phones, Microwave ovens & equipment, WiFi links and other nearfield RF equipment found in the Lab, Office or Home.
Display: 3.5digit LCD
Bandwidth: 50MHz-3700MHz
Range: 0.1μW/cm²-100.9μW/cm²
Accuracy: 0.1μW/cm²
Alarm Threshold: 20.0μW/cm²
Alarm Indicator: LED Panel Lamp
Sample Time: <0.3sec.
Operating Temp: -15C° to +60C°
Power: 9V Battery (6F22)
CE Listed



H: 1-1/2" W: 2-3/4" T: 1-1/4" WT: .52

STOCK #	DESC.	1EA
31860-TE	Microwave EMF Meter	\$149.95

MULTIFUNCTION LAN TESTER



3 piece unit allows testing of installed lines and POE. Tests RJ-45/4-Pair or Coaxial cables. Instant diagnosis for opens, shorts, miswires, split pairs etc. LEDS indicate status as well as actual pin-pin connections. Auto & Step modes. **Cable tester Not for Active Circuits**
POE module LEDS indicate if active & Type.
9V battery powered.
Includes plastic case & BNC to RJ adapters.

WT: .06

STOCK #	DESC.	1EA
32305-TE	Mini LAN/POE Tester	\$14.95

RJ CRIMPER & CABLE TESTER



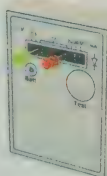
Heavy Duty RJ Plug Crimp Tool with Removable LAN Test modules in handle.

Features: Removable Grips, Ratchet Action, 3 Cavity Crimp, Cutter/Stripper for UTP & STP (SFTP) Cable.
Crimps RJ-11/12 & 45 Plugs (4,6,8 Pin)
Tests: Opens, Shorts and Crossed wiring
Modes: Single and Cycle (run through 6 times)
Includes Soft Woven Belt Pouch
Power: 3pcs. LR-44 Button cells (Included).

L: 7-3/4" WT: 1.3

STOCK #	DESC.	1EA
32307-TL	RJ Plug Crimper & LAN Tester	\$29.95

LED TESTER



Compact, pocket sized checker/comparator for LEDs. 12 position test socket strip provides test currents of .5, 10, 20, 30 & 50mA. 7 center positions provide 10mA test current allowing you to compare several LED at the same time. Requires 9V battery (not supplied)

L: 3-1/8" W: 2-3/8" T: 7/8" WT: .1

STOCK #	DESC.	1EA	5+EA
14371-TE	LED Tester	\$6.95	\$5.95

CLAMP-ON 100A CURRENT TRANSFORMER



SCT-013-000 Compact clamp around (Split Core) CT for monitoring current in breaker panels, transformers, motor controllers and motors.
Range: 0-100AAC,
Output: 1V full scale,
Max conductor dia.: 12.5mm (<.5in.)
1m lead terminated in a 3.5mm (1/8in) phone plug.

L: 2-1/4" W: 1-3/8" T: 7/8" WT: .2

STOCK #	DESC.	1EA
32100-TE	100A/1V Clamp Current Xformer	\$10.95

CLAMP-ON 100A CURRENT TRANSFORMER

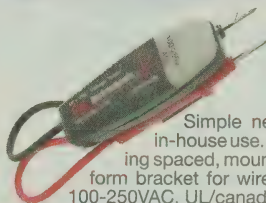


SCT-013-000 Compact clamp around (Split Core) CT for monitoring current in: breaker panels, transformers, motorcontrollers & motors.
Range: 0-100AAC
Output: 50mA full scale
Max conductor dia.: 12.5mm (<.5in.)
1m lead terminated in a 3.5mm (1/8in) phone plug.

L: 2-1/4" W: 1-3/8" T: 7/8" WT: .2

STOCK #	DESC.	1EA
31956-TE	100A/50mA Clamp Current Xformer	\$10.95

AC VOLTAGE TESTER



Simple neon lamp AC Voltage tester for in-house use. Designed to test AC outlets using spaced, mounted probes or remove probe(s) form bracket for wire to wire testing. Input range: 100-250VAC. UL/canada/USA 3in. leads.

WT: .04

STOCK #	DESC.	1EA
31924-TE	AC Tracer	\$7.95

POE TESTER

Power Over Ethernet test unit allows testing of installed Type A & B lines and jacks. RJ-45 Jack & a 4" plugtail for cable & installed jack tests. LEDS indicate if active & Type. Includes 5" M/M jumper.

L: 6-1/4" O/A 2" Body WT: .06

STOCK #	DESC.	1EA
32306-TE	Mini POE Tester	\$4.95

USB VOLT/CURRENT MONITOR & CHARGER



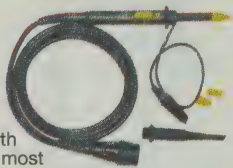
Charge monitor Cell phone, tablet, Pad, as well as mice, external drives etc. that plug into a computer USB Port or wall charger with USB connector. Single USB Type A Male plug on 4" cable for input. 2 Output USB Female Type A ports. Current displayed is total for both Ports
Input Voltage: 3.2-10V Charger/Port dependant
Display 3 Digit Red LED, .39" characters
Alternates between V & Current approx. every 4 sec
Current Available: >3A, Charger Dependant

Port I: Universal Port with Data transfer & charging. For use with original device chargers. Supports Apple iPad, iPhones & Samsung S4 High current chargers
PortII: Charging Port only no Data transfer.
Special for Apple iPad, iPhones & Samsung S4 High Current Chargers with 2.1A or more. For use with original and replacement high current USB device chargers.

L: 3-1/4" W: 1" T: 9/16" WT: .06

STOCK #	DESC.	1EA
31563-ME	USB Cell Charger/Monitor	\$8.95

SCOPE PROBES SELECTABLE 10X OR 1X



Quality oscilloscope probes with a BNC connector to match to most equipment. Max Input: 600V AC P/P + DC. Impedance: 1X= 1M ohm; 10X= 10M ohm. With ground lead & retractable hook tip, IC tip.

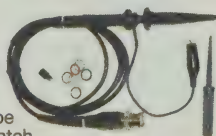
For field service, schools or shop.

20MHz Probe: Bandwidth: 1X = >15MHz +3db, 10X=>20MHz +3db, Capacitance 1X = 46pF; 10X = 15pF, (+ scope input)
40MHz Probe: Bandwidth: 1X = >15MHz +3db, 10X=>40MHz +3db, Capacitance 1X = 46pF; 10X = 15pF, (+ scope input)
60MHz Probe: Bandwidth: 1X = >15MHz +3db 10X=>60MHz +3db, Capacitance 1X = 46pF; 10X = 15pF, (+ scope input).
200MHz Probe: Bandwidth: 1X=>10MHz+3db, 10X=>200MHz +3db, Capacitance 1X = 46pF; 10X = 12pF, (+ scope input).

L: 1.2m WT: .2

STOCK #	DESC.	1EA
15085-TE	20MHz Probe	\$7.95 any qty.
15086-TE	40MHz Probe	\$8.95 any qty.
28630-TE	60MHz Probe	\$9.95 any qty.
15087-TE	200MHz Probe	\$18.95 any qty.

40MHZ SCOPE PROBE



Mueller Quality 40MHz oscilloscope probe with a BNC connector to match to most equipment. With ground lead & retractable hook tip, IC tip. For field service, schools or shop. CE Listed
 Max Input: X1: <200VDC + Peak AC.
 X10: <600VDC + Peak AC

Imped: 1X= 1M ohm 10X= 10M ohm
 Bandwidth: 1X = >6MHz +3db, 10X=>40MHz +3db
 Capacitance 1X = 85-115pF; 10X = 18.5-22.5pF
 Includes: Adj. screwdriver, Gnd. Lead, storage Pouch,

L: 1.2m WT: .2

STOCK #	DESC.	1EA
18164-TE	Mueller Scope Probe	\$8.95

MINI SCOPE PROBE



Mini Oscilloscope probe used with Digital Scopes along several other types of test equipment & analyzers.

Connector: Gold Plated MCX Male

Attenuation: 1X & 10X

Capacitance: 1:1=98pF+- 10pf

10:1+ 33pF +- 4pf

Bandwidth: 1:1= 20MHz

10:1= 60MHz

Max. Input: 600VACp/p/200VDC/600V ACp/p+VDC

includes Plastic Storage pouch, Grounding lead, Color identifying rings & pointed tip shield.

L: 44" WT: .14

STOCK #	DESC.	1EA
31249-TE	Mini MCX Scope Probe	\$16.95

ATTENUATORS TERMINATOR



Impedance: 50 ohms+-1%

Range: DC-1GHz

Vswr: <1.5:1

Power: 1W

BNC-M to BNC-F Attenuators & feedthrough terminator for test equipment, probes and fixtures

WT: .2

STOCK #	DESC.	1EA	5+EA
16545-TE	3±.5db BNC Attenuator	\$9.95	\$7.95
16546-TE	6±1db BNC Attenuator	\$9.95	\$7.95

DMM METER PROBES



Safety test leads with Sharp Probe tip and right angle Safety banana plug on other. Rated Cat III/1KV/10A. CE Listed

L: 1m WT: .25

STOCK #	DESC.	1EA
19578-TE	Test Leads Banana /Probe Tip	\$5.95

DMM METER PROBES



WARNING: Safety style banana plugs will not work in the shorter standard banana sockets

Safety meter probe sets Rated Cat III/1KV/10A.

Right Angle Safety Banana Plug on meter ends, 20mm insertion depth, 1-3/8" Guarded tip on probe end. CE Listed

L: 1m WT: .25

STOCK #	DESC.	1EA
32102-TE	Test Leads Banana /Probe Tip	\$4.95

MULTIMETER PROBE SET

Safety probe set includes:

1m Red & Black base leads with right angle Banana Plug on meter end. Other end has interchangeable accessories below.

Probes: 4-1/8" Banana Plug with Sharp Probe tip.

3-1/4" insulated Crocodile Clips

2-1/4" Hook (Flea) Clips with 10" leads

Cloth folding tool bag with pouches

L: 1m+ WT: .5

STOCK #	DESC.	1EA
19580-TE	Test Leads Set	\$19.95

TWEezer PROBE

Tweezer style component test leads. Red and meter ends with Safety style banana plugs. Ideal for checking surface mounted resistors & caps. For Field, shop or lab use. 9" Red/Black lead length, 10-1/2" jacketed lead. 6" tweezer length. Category I use only.

L: 21" O/A WT: .1

STOCK #	DESC.	1EA
31937-TE	Tweezer Probe Lead	\$5.95

BNC TEST CABLES



RG-58U test cable with a molded strain relief BNC connector on one end and red & black clips on the other. RG-58 cable is 3ft long with an additional 8" of black & Red wire from a strain relief to the clips.

L: 50" WT: .2

STOCK #	DESC.	1EA	5+EA
22802-TE	Test Hook Cable	\$3.99	\$2.99
19027-TE	Alligator clips Cable	\$3.99	\$2.99
19026-TE	Banana Plugs Cable	\$3.99	\$2.99

MICRO CLIP TEST LEADS

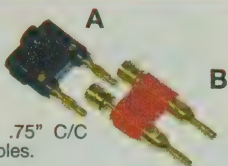


Red & Black test leads with Banana Plugs on one end and Micro clips on the other.

L: 24" WT: .05

STOCK #	DESC.	1EA	10+EA
31182-TE	24in. Test Hook Leads	\$1.95	\$1.79

DUAL BANANA/BINDING POSTS



Quality, Gold plated, stackable, .75" C/C spacing. For test equipment & cables. Dual banana plug with: Binding Posts OR Set screws to attach wire, cable, component or spade lugs.

WT: .11 (Banana/Posts) WT: .03 (Banana only)

STOCK #	DESC.	1EA	10+EA
14901-PL	Red Dual Banana Plug A	\$1.25	\$0.99
14902-PL	Black Dual Banana Plug A	\$1.25	\$0.99
14903-PL	Red Dual Binding Post B	\$2.50	\$1.95
14904-PL	Black Dual Binding Post B	\$2.50	\$1.95

BINDING POST/BNC ADAPTER



Quality, test adapter features Dual Binding posts to a BNC Male connector. Binding posts have wire hole and accept Banana Plugs as well Black Post is connected to BNC Shell & is marked "GND" while the Red Post is connected to BNC center pin.

L: 2-3/8" Body

WT: .06

STOCK #	DESC.	1EA	10+EA
17579-PL	Binding Post to BNC	\$2.95	\$2.75

STACKABLE TEST LEADS



1m test leads with Stackable Banana plugs on each end. Rated 15A@30VAC/60VDC

L: 1m

WT: .05

STOCK #	DESC.	1EA
19574-PL	Red Stackable Test Lead	\$1.69
19575-PL	Black Stackable Test Lead	\$1.69

ALLIGATOR BANANA LEADS



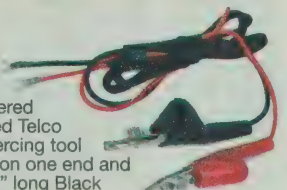
2m long Handy pair of Red & Black Stackable test leads. Heavy duty silicone insulated -16AWG fine stranded wire. Insulated alligator clip on one end and a stackable Banana Plug on the other. For Field, shop or lab use.

L: 2m

WT: .28

STOCK #	DESC.	1EA
32734-TE	2MRed & Black Silicone Test Leads	\$8.95

TELCO TEST LEAD



45" Red & Black, cloth covered telco style test leads. Angled Telco alligator clips with cable piercing tool steel spike and vinyl boots on one end and spade lugs on the other. 24" long Black overjacket from spade lug end. Designed to grip punch-down blocks as well as wire, posts etc.

L: 45"

WT: .18

STOCK #	DESC.	1EA
32784-TE	Red & Black Telco Test Lead	\$8.95

SMD TEST LEADS



Set of 10 SMD test leads. One end a mini clip with a spring steel contact designed to attach to IC leads etc. and other end has a female header socket for .025" header pins. Clip: L: 1-15/16" O/A W: 7/16" T: 3/16"

L: 9"

WT: .02

STOCK #	DESC.	1EA
32720-TE	10 Red Mini SMD Test Leads	\$5.95
32721-TE	10 Green Mini SMD Test Leads	\$5.95

ALLIGATOR CLIP LEAD SET



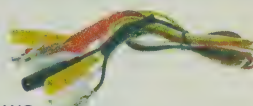
Handy set of 10 multi colored clip leads. 26 AWG leads 12" long, with insulated 27mm or 35mm alligator clips on each end, 2 leads each in five colors. For shop or lab.

L: 12"

WT: .2

STOCK #	DESC.	1SET	10+SET
23569-TE	Mini Clip Lead Set	\$1.95	\$1.75

MED. ALLIGATOR CLIP LEAD SET



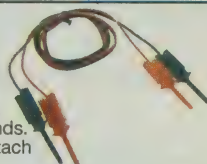
Handy set of 4 clip leads. 16 AWG leads 36" long, with insulated 50mm alligator clips on each end, 1 lead each in four colors. For shop or lab.

L: 36"

WT: .3

STOCK #	DESC.	1SET
33161-TE	4pc. 16AWG Clip Lead Set	\$4.95

30IN. SMD CLIP LEADS



Red & Black pair of SMD test leads. 30in. lead with mini clips on both ends. Spring steel contact designed to attach to IC leads.

Clip: L: 1-15/16" O/A W: 7/16" T: 3/16"

L: 30in

WT: .02

STOCK #	DESC.	1EA
33035-TE	30in. SMD Clip Lead Pair	\$1.95

SMD TEST CLIPS



Set of 6 colored, test clips with spring steel contacts designed to attach to SMD IC leads etc. 3/16" body thickness. 1" probe length.

L: 1-15/16" O/A W: 7/16" T: 3/16"

WT: .02

STOCK #	DESC.	1SET
32333-TE	6 Mini SMD Test Clips	\$2.95

MICRO TEST CLIPS



Set of 5 colored, Micro test clips with beryllium-copper contacts designed to attach to SMD IC leads etc. 7/8" probe length.

L: 1-5/8 O/A" W: 1/2" T: 3/8"

WT: .02

STOCK #	DESC.	1SET
32513-TE	5 SMD Micro Test Clips	\$2.95

TEST HOOK SET



5 pc. set of beryllium copper test hooks designed to clip to component leads leaving your hands free. Includes Red, Blue, Yellow, Green & Black. 1-1/2" probe length.

L: 2-1/4" O/A Dia: 1/2" Body

WT: .045

STOCK #	DESC.	1SET
32438-MI	5pc. Component Clip Set	\$2.95

TEST HOOKS



Red & Black beryllium copper test hooks designed to clip to component leads leaving your hands free. 1-1/2" probe length, 2-1/4" long overall, 1/2" body Dia. Add your own wire for custom lengths. For lab, shop or school.

WT: .005

STOCK #	DESC.	1EA	25+EA
27161-MI	Red Component Clip	\$0.60	\$0.45
27163-MI	Black Component Clip	\$0.50	\$0.45

BINDING POSTS

Set of 5 Binding Posts with cast barrel & thermoplastic cover. Top opening for banana plug. Includes mounting nuts & solder tab. Mounts in 5/16" hole.

H: 1-1/4" O/A

WT:.053

STOCK #	DESC.	1SET	10-SET
32810-BP	5Pc. Binding Post Set	\$2.95	\$2.75

50A BINDING POST

Heavy Duty safety nickel plated brass binding posts accept banana plug in top. Rated 50A@30VAC/60VDC. All front panel connections are recessed to prevent contact. Mounts in 15/32" hole + 2 anti-rotation notches. M6 Stud with nut & Washer on back.

H: 2-1/16" Dia: 3/4"

WT: .06

STOCK #	DESC.	1EA	10-EA
19573-PL	Green 50A Binding Post	\$1.95	\$1.75

BANANA JACKS

Set of 5 Banana Jacks with cast barrel & thermoplastic cover. Top opening for banana plug. Includes mounting nut & solder tab. Mounts in 6mm hole.

H: 9/16" O/A

WT: .022

STOCK #	DESC.	1SET	25-SET
33298-PL	5Pc. Banana Jack Set	\$1.95	\$0.95

SAFETY BANANA JACKS

Safety style Banana Jacks with brass barrel & thermoplastic cover. Top opening for accepts standard as well as newer required Safety type with shrouded banana plug. Includes mounting nut. Solder tab terminal. Mounts in 15/32in. hole.

H: 1-1/8" O/A

Dia: 9/16"

WT:.011

STOCK #	DESC.	1SET	10-SET
30080-PL	Red Safety Banana Jack	\$1.25	\$0.99
30081-PL	Black Safety Banana Jack	\$1.25	\$0.99
30082-PL	Green Safety Banana Jack	\$1.25	\$0.99
30083-PL	Yellow Safety Banana Jack	\$1.25	\$0.99
30084-PL	Blue Safety Banana Jack	\$1.25	\$0.99

DUAL BINDING POSTS

Red & Black, safety binding posts accept banana plug in top or wire through hole in side. All front panel connections are recessed to prevent contact. Mounts in double .50" holes on .75" ctr. Solder terminals onback.

WT: .07

STOCK #	DESC.	1EA	10-EA
14492-PL	Dual BindingPost	\$1.95	\$1.50

STACKABLE BANANA PLUGS

Stackable Banana plugs with nickel plated brass body with Four leaved Beryllium copper spring tip, ABS cover. Screw connection. Rated 24A@30VAC/60VDC.

H: 1-17/32"

WT:001

STOCK #	DESC.	1EA	10EA
19576-PL	Red Stackable Banana Plug	\$0.49	\$0.45
19577-PL	Black Stackable Banana Plug	\$0.49	\$0.45

BANANA PLUGS

Set of 5 banana plugs with nickel plated brass Four leaf spring tip, thermoplastic cover. Top entry for wire with screw clamp. Side hole for connecting another plug

WT: .035

STOCK #	DESC.	1SET	10-SET
30045-PL	5Pc. Banana Plug Set	\$1.95	\$1.75

BANANA PLUGS

Pair of Red & Black banana plugs with nickel plated steel Four leaf spring tip and pliable strain relief shell. Top entry for wire with set screw clamp. Side hole for connecting another plug.

L: 2-1/8"

WT: .024

STOCK #	DESC.	1PAIR
30163-PL	Red & Black Banana Plug	\$1.49

TELCO TYPE TEST CLIPS

Mueller JP-8078, 2-1/4" Angled Telco alligator clips with cable piercing tool steel spike. Designed to grip punch-down blocks as well as wire posts etc. Nickel-silver, with brass screw, washer & bronze lock washer. Includes pair of clips plus 1 Red & 1 Black flexible vinyl boot. For test leads, clip leads, or test jigs.

L: 2-1/4"

WT: .088

STOCK #	DESC.	1PAIR
18160-TL	Mueller Telco Gator Clips	\$4.95

BATTERY CLIPS & BOOTS

Handy mesh jaw, steel battery clip with insulated Red or Black Vinyl plastic boot. Amp listed is Max for part.

STOCK #	DESC.	WT.	1EA	5-EA
16437-BC	5A Clip Red	.015	\$0.25	\$0.15
16438-BC	5A Clip Black	.015	\$0.25	\$0.15
16439-BC	10A Clip Red	.05	\$0.35	\$0.25
16440-BC	10A Clip Black	.05	\$0.35	\$0.25
16441-BC	20A Clip Red	.03	\$0.40	\$0.30
16443-BC	30A Clip Red	.04	\$0.45	\$0.35
16444-BC	30A Clip Black	.04	\$0.45	\$0.35
16445-BC	50A Clip Red	.06	\$0.59	\$0.49
16446-BC	50A Clip Black	.06	\$0.59	\$0.49

ALLIGATOR CLIPS & BOOTS

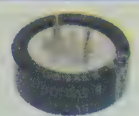
Alligator clips with Red or Black Vinyl boot. Solder or crimp. mm listed is length of metal clip

STOCK #	DESC.	WT.	1EA	5-EA
16450-AL	27mm Clip Red	.003	\$0.10	\$0.05
16452-AL	35mm Clip Red	.005	\$0.15	\$0.07
16453-AL	35mm Clip Blk	.005	\$0.15	\$0.07
16454-AL	45mm Clip Red	.009	\$0.19	\$0.09

1F SUPERCAP

P.C. Mount "Supercap" rated: 4.0F @ 5.5VDC.
For energy harvesting, storage, memory/
clock backup etc.

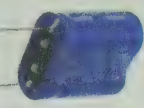
Dia: 13/16"	H: 5/16"	WT: .014
STOCK #	DESC.	1EA
32044-CR	1F @ 5.5V Supercap	\$1.95



4F SUPERCAP

P.C. Mount "Supercap"
Rated: 4.0F @ 5.5VDC.
For energy harvesting, storage,
memory or clock backup etc.

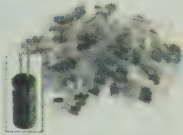
memory or clock backup etc.			
H: 1"	W: 1"	T: 1/2"	WT: .02
STOCK #	DESC.		1EA
32353-CR	4F @ 5.5V Supercap		\$4.95



ELECTROLYLIC CAPACITOR ASSORTMENT, 260 PCS.

260 piece Assortment of radial lead
electrolytic capacitors.
That's less than a nickel each!

10 each
50VDC: 1uF, 2.2uF, 3.3uF, 4.7uF, 10uF,
22uF, 33uF, 47uF, 100uF
25VDC: 1uF, 2.2uF, 3.3uF, 4.7uF, 10uF, 22uF, 33uF, 47uF, 100uF
16VDC: 100uF, 220uF, 330uF, 470uF, 1000uF
10VDC: 100uF, 220uF, 330uF, 470uF

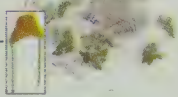


		WT: .5
STOCK #	DESC.	1PAC
32531-CR	260pcs. Cap Assortment	\$10.95

400PC. MONO CERAMIC CAP. ASSORTMENT

400piece assortment of radial lead mono-
lythic ceramic caps. Rated: 50VDC
That's less than three cents each!

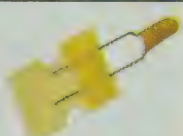
0.2" Lead Spacing, 20 pieces each:
30pF (100) 20pF (200) 30pF (300)
47pF (470)
100pF (101) 200pF (201) 470pF (471)
1nF (1000pF/102) 2.2nF (2200pF/222) 3.3nF (3300pF/332)
4.7nF (4700pF/472)
10nF (.01uF/103) 2.2nF (.022uF/223) 33nF (.033uF/333)
47nF (.047uF/473)
0.1uF (104) 0.22uF (224) 0.47uF (474)
1 uF (105) 4.7uF (475)



4.7uf (105)	4.7uf (475)	WT: .1
STOCK #	DESC.	1PAC
32534-CM	400pcs. Mono Cap Assortment	\$10.95

TANTALUM CAP

P.C. Mount Tantalum electrolytic cap.
Rated: 2.2uF @ 16VDC.
Lead spacing: 0.2in.
SOLD IN PACKS OF 10pcs.

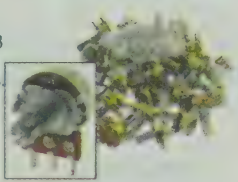


		WT: .01
STOCK #	DESC.	1EA
32193-CR	2.2uF Tantalum Cap.	\$1.00

VARIABLE POTS

30 pc. assortment of type WH148
PC mount, variable resistors.
Contains Both Single & Dual Pots.

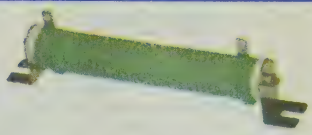
Rated: 0.125W (1/8W)
Curve: Type "B" (Linear)
Rotational Angle: ~300 deg.
Mounting Thread: M7x0.75
Shaft Dia: 6mm Knurled
Life: ~10K Rotations
Noise (initial) <100mV
Includes 1ea. Following Values:
Single/Short Shaft: 1K, 2K, 5K, 10K, 20K, 50K, 100K, 500K, 1M
Dual/Short Shaft: 1K, 10K, 20K, 50K, 100K, 500K
Single/Long Shaft: 1K, 2K, 5K, 10K, 20K, 50K, 100K, 500K, 1M
Dual/Long Shaft: 1K, 5K, 10K, 20K, 50K, 100K
Mounting Hole: 7.8mm.



Mounting hole: 7.6mm		WT: .5
STOCK #	DESC.	1PAC
32809-VR	30pc. Variable Resistor Assortment	\$12.95

120 WATT RESISTORS

Power resistors rated: 120 Watts, 5%. Use for power supply or
audio loads. Solder terminals and steel Mtg. brackets

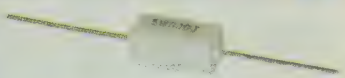


Audio loads. Gender terminals and steel wing. Brackets

L: 8-1/2"	W: 1-1/4"	H: 2-1/2"	O/A	WT: .5
STOCK #	DESC	1EA	50+EA	
17785-RS	1 Ohm 120W Resistor	\$5.95	\$4.95	
17786-RS	2 Ohm 120W Resistor	\$5.95	\$4.95	
17787-RS	4 Ohm 120W Resistor	\$6.95	\$5.95	
17788-RS	8 Ohm 120W Resistor	\$6.95	\$5.95	
17789-RS	16 Ohm 120W Resistor	\$6.95	\$5.95	

POWER BLOCK RESISTORS

Ceramic Block, Wirewound Power resistors rated: 5%. Use for
shunts, ballast resistors etc. 1-1/4" leads

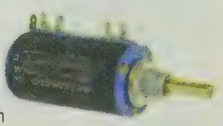


Shunts, ballast resistors etc. 1-1/4" leads

L: 5W 7/8"	10W 1-7/8"	W: 3/8"	H: 3/8"	WT: .01/.022
STOCK #	DESC.	1EA	100+EA	
17791-RS	1.0 Ohm 5W Resistor	\$0.35	\$0.29	
30026-RS	1.0 Ohm 10W Resistor	\$0.45	\$0.39	

10 TURN POTS

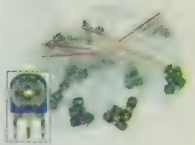
10 turn wirewound, variable resistor
rated: +- 5%, 2W. Mounts in 5/16in.
5/32in. Dia X 1/2" long shaft with
screwdriver slot. Includes mtg. nut.






L: 2-1/4in. O/A	Dia: 7/8in.	WT: .05
STOCK #	DESC.	1EA
30471-VR	1K 10 Turn Pot	\$4.95
32080-VR	10K 10 Turn Pot	\$4.95
32347-VR	47K 10 Turn Pot	\$4.95
32081-VR	100K 10 Turn Pot	\$4.95

VERTICAL VARIABLE POTS

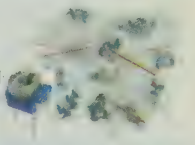
Handy assortment of 0.1W vertical PC
mount, horizontal adjust pots. 50 Total
Pcs. 5pcs. each of:



Pcs. per pack									
100Ω(101)	1KΩ(102)	10KΩ(103)							
100KΩ(104)	1MΩ(105)								
200Ω(201)	2KΩ(202)	500Ω(501)	5KΩ(502)	50KΩ(503)					
WT: .04									
STOCK #		DESC.						1PAC	
32358-VR		50pc. Assortment Vert. Pots						\$3.95	

HORIZONTAL VARIABLE POTS

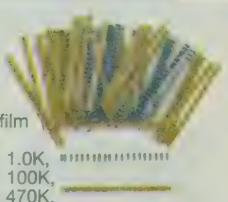
Handy assortment of 0.1W, horizontal
PC mount, vertical adjust pots. 65 Total
Pcs. 5pcs. each of:



Pcs. Spcs. each Pk.				
100Ω(101)	1KΩ(102)	10KΩ(103)		
100KΩ(104)	1MΩ(105)			
200Ω(201)	2KΩ(202)	20KΩ(203)	200KΩ(204)	
500Ω(501)	5KΩ(502)	50KΩ(503)	500KΩ(504)	
				WT: .06
STOCK #	DESC.			Price
32359-VR	65pc. Assortment Horz. Pots			\$4.95

520 PC. 1/4W RESISTOR ASSORTMENT

20pcs ea. (520 total) of 1/4W metal film
resistors with the following values:



10, 100, 120, 220, 270, 300, 510, 1.0K, 4.7K, 5.1K, 5.6K, 10K, 12K, 27K, 100K, 120K, 150K, 220K, 270K, 330K, 470K, 510K, 820K, 1.0M, 1.2M, 2.0M	WT: .14	
STOCK #	DESC.	1PAC
32037-RS	1/4W Resistor Assortment	\$4.95

DIE CAST ALUMINUM BOXES

Aluminum alloy with cover & M3.5 stainless steel screws included. Internal guides on ends & sides for holding PC boards

Natural Bare Aluminum Finish
OUTSIDE DIMN. LISTED

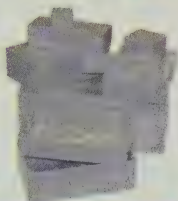


STOCK #	L"	W"	H"	WT.	TEA
16281-BX	2.36"	2.17"	1.18"	.18	\$1.80
16282-BX	3.15"	2.17"	0.98"	.2	\$3.80
16283-BX	3.50"	1.37"	1.18"	.16	\$3.54
16284-BX	4.49"	2.52"	1.18"	.28	\$5.34
16285-BX	4.49"	2.52"	2.17"	.36	\$6.54
16286-BX	4.49"	3.50"	2.17"	.50	\$10.01
16287-BX	4.72"	3.94"	1.38"	.56	\$7.77
16288-BX	5.51"	3.94"	2.95"	.86	\$11.22
16289-BX	6.50"	5.00"	2.95"	1.12	\$14.79
16290-BX	6.73"	4.76"	2.17"	.96	\$13.41
16291-BX	6.73"	4.76"	4.17"	1.40	\$18.62
16292-BX	8.74"	5.75"	2.17"	1.44	\$17.97
16293-BX	8.74"	5.75"	4.17"	2.80	\$24.21
16294-BX	9.84"	9.84"	3.94"	3.50	\$44.98
16295-BX	10.83"	6.89"	2.56"	2.08	\$26.91

SEALED PLASTIC BOXES

Gray ABS plastic project boxes with lids. Tongue & groove sealing meet IP-65 & NEMA 4 requirements. 4 standoffs on base for holding PC boards. Includes stainless cover screws & neoprene gasket material.

17391, 17400-17407 NO Internal Guides



OUTSIDE DIMN. LISTED

STOCK #	L"	W"	H"	WT.	TEA
17392-BX	4.53"	3.54"	2.17"	.35	\$6.95
17393-BX	6.73"	4.76"	2.17"	.54	\$8.95
17395-BX	6.73"	4.76"	3.15"	.73	\$10.95
17396-BX	7.68"	3.15"	2.17"	.49	\$7.05
17398-BX	10.43"	7.28"	3.74"	1.5	\$19.95
17399-BX	2.05"	1.97"	1.38"	.09	\$3.95
17402-BX	7.87"	4.72"	2.95"	.8	\$11.95
17405-BX	9.45"	6.3"	4.72"	1.5	\$19.95
17406-BX	11.81"	9.06"	4.37"	2.4	\$32.95
17407-BX	14.17"	7.87"	5.91"	3.1	\$29.95

19" RACK MOUNT CABINETS

Black plastic rack mount clamshell cases. Vented sides with removable front & rear panels. Internal standoffs on top & bottom. Assembly required.

NOTE: Not Available For Air Shipments

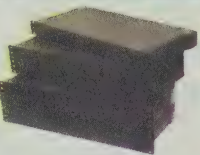
Internal space:

17086-BX W: 16-3/16" D: 7-11/16" H: 1" WT: 1.9

17087-BX W: 16-3/16" D: 7-11/16" H: 2-7/8" WT: 2.5

17088-BX W: 16-3/16" D: 7-11/16" H: 4-1/2" WT: 3.0

W: 19" D: 8"

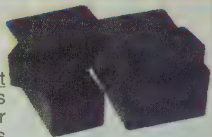


PLASTIC PROJECT CABINETS

Black plastic project boxes with flat lids. Internal guides on ends & sides for holding PC boards. Includes cover screws. 15881-BX NO Internal Guides

OUTSIDE DIMN. LISTED

STOCK #	L"	W"	H"	WT.	TEA	10+EA
15522-BX	3"	2"	1.16"	.07	\$1.95	\$1.59
15523-BX	4"	3"	1.6"	.13	\$2.49	\$1.95
15881-BX	4.41"	2.24"	.87"	.08	\$1.95	\$1.59
15518-BX	5"	2.5"	1.75"	.17	\$2.95	\$2.49
32652-BX	5.9"	3.9"	2.36"	.27	\$3.49	\$2.95
15883-BX	7.25"	4.5"	2.52"	.50	\$5.49	\$4.49

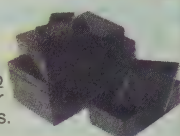


PLASTIC PROJECT CABINETS

Black plastic project boxes with deep lids. Internal guides on ends & sides for holding PC boards. Includes cover screws.

OUTSIDE DIMN. LISTED

STOCK #	L"	W"	H"	WT.	TEA	10+EA
15885-BX	3.74"	1.89"	1.46"	.11	\$2.95	\$2.49
15886-BX	4.53"	2.36"	1.73"	.15	\$3.49	\$2.95
15520-BX	5.3"	3"	1.9"	.25	\$3.95	\$3.49
15887-BX	6.3"	3.74"	2.44"	.33	\$3.95	\$2.95
15888-BX	7.6"	4.53"	2.95"	.45	\$7.95	\$6.49
15521-BX	8.8"	5.5"	3.6"	.75	\$7.95	\$7.25



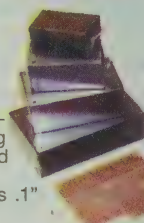
PLASTIC PROJECT CABINETS & PERF BOARDS

Black plastic project boxes with Aluminum lids. Internal posts for holding PC boards. Includes cover & PC board screws.

Solderable phenolic Perf. Board has .1" hole grid pattern, copper one side.

All Dimn. Approximate.

15911-BX: L: 5-1/4"	W: 3-1/4"	D: 1-9/16"	WT: .22
15912-PB: L: 4-5/16"	W: 3-1/8"	T: 1/16" (.062)	WT: .04
15913-BX: L: 4-1/8"	W: 2-5/8"	D: 1-9/16"	WT: .15
15914-PB: L: 3-1/8"	W: 2-1/2"	T: 1/16" (.062)	WT: .02
15915-BX: L: 3-5/16"	W: 2-1/8"	D: 1-3/8"	WT: .11
16227-PB: L: 2-5/16"	W: 1-15/16"	T: 1/16" (.062)	WT: .02
15917-BX: L: 2-11/16"	W: 1-11/16"	D: 1-3/16"	WT: .08
15918-PB: L: 1-3/4"	W: 1-1/2"	T: 1/16" (.062)	WT: .009



STOCK #	DESC.	TEA	10+EA
15911-BX	Large Project Box	\$4.95	\$3.25
15912-PB	Large Perf. Board	\$1.75	\$1.25
15913-BX	Medium Project Box	\$3.50	\$2.49
15914-PB	Medium Perf. Board	\$1.10	\$0.89
15915-BX	Small Project Box	\$2.75	\$1.85
16227-PB	Small Perf. Board	\$0.79	\$0.49
15917-BX	Mini Project Box	\$2.50	\$1.69
15918-PB	Mini Perf. Board	\$0.59	\$0.49

RUBBER FEET

3M P/N SJ6316 peel-n-stick rubber feet. Sheet of 24 Gray bumpers 7/8" in diameter X 3/8" tall.

Ideal as shock absorbers, equipment feet.

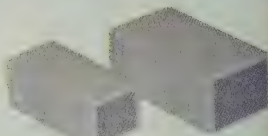
Dia: 7/8" HT: 3/8" WT: .24



STOCK #	DESC.	TEA
31471-BU	Rubber Bumpers	\$3.50

PLASTIC INSTRUMENT CASES

Clamshell design ABS plastic instrument case. Internal posts for holding PC boards. Light gray shells with Dark Gray endplates. Slightly contoured top & bottom. Includes 4 screws.



STOCK #	DESC.	TEA	10+EA
17811-BX	1U Metal Rack Cabinet	\$34.95	
17812-BX	2U Metal Rack Cabinet	\$39.95	

19in. rack mount cases. 1/8in. Aluminum Front Panel with steel chassis & covers. Satin black textured paint.

NOTE: Not Available For Air Shipments

17811-BX: W: 19" D: 11.8" H: 1-3/4" WT: 5.8

17812-BX: W: 19" D: 11.9" H: 3-1/2" WT: 7.2

17812-BX: W: 19" D: 11.9" H: 3-1/2" WT: 7.2

17812-BX: W: 19" D: 11.9" H: 3-1/2" WT: 7.2

17812-BX: W: 19" D: 11.9" H: 3-1/2" WT: 7.2

17812-BX: W: 19" D: 11.9" H: 3-1/2" WT: 7.2

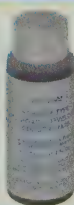
17812-BX: W: 19" D: 11.9" H: 3-1/2" WT: 7.2

17812-BX: W: 19" D: 11.9" H: 3-1/2" WT: 7.2

PREMIER BOARD DEVELOPER

Concentrated developer (not etchant) for PREMIER Resist coated board material. Mix 10/1 with water. 10 oz. of mix will develop 10-22sq. ft. of board depending on art complexity.

WT: .2/.6



STOCK #	DESC.	1EA	5-EA
14890-DT	2oz. Developer	\$7.95	\$7.49
14891-DT	4oz. Developer	\$13.95	\$13.49

PREMIER SERIES COATED BOARDS

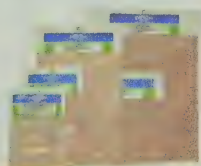
Premier Series boards are ideal for repeatedly making PC boards from POSITIVE films (Opaque lines/patterns on clear film). Resist coated Premier boards do not require U/V light, only a 100W light bulb. Double (DS) or single sided (SS) copper clad PC Board material. FR4 Base material with 1oz. copper/side coated with resist and covered with a peel off plastic sheet (removed before exposure). Exposing frame recommended.



STOCK #	DESC.	WT.	1EA	5-EA
14880-DT	3" X 4" S/S	.1	\$4.95	\$4.49
14881-DT	3" X 6" S/S	.12	\$5.95	\$4.95
14882-DT	4" X 6" S/S	.15	\$6.82	\$5.99
14883-DT	6" X 9" S/S	.3	\$11.00	\$10.85
14884-DT	6" X 12" S/S	.4	\$17.95	\$15.95
14885-DT	3" X 4" D/S	.1	\$5.49	\$4.49
14886-DT	6" X 6" D/S	.22	\$10.95	\$9.95
14887-DT	6" X 9" D/S	.33	\$13.95	\$12.49
14888-DT	6" X 12" D/S	.5	\$19.95	\$18.95

COPPER CLAD BOARDS

Double (DS) or single sided (SS) copper clad PC Board material. Standard 1/16" thick FR4 Base material with 1oz. copper/side



STOCK #	DESC.	WT.	1EA	5-EA
14868-DT	3" X 5" S/S	.1	\$1.95	\$1.49
14869-DT	4" X 6" S/S	.12	\$2.25	\$1.95
14870-DT	6" X 9" S/S	.3	\$4.75	\$3.95
14871-DT	6" X 6" D/S	.2	\$3.95	\$3.25
14872-DT	8" X 10" D/S	.4	\$12.49	\$10.95

TIN PLATING KIT

Will plate a copper board with a bright, protective tin plate approx. .0004" thick. Improves solderability, resists oxidation/tarnish & produces a professional appearance. Supplied as a dry power concentrate. When mixed will plate approx. 600sq./in. Kit includes: Concentrate, Tray, handling tool & 16oz. storage bottle for mix.

WT: .6/.4



STOCK #	DESC.	1EA	5-EA
14896-DT	Tin Plating Kit	\$16.95	\$15.49
14897-DT	1 Pt. Concentrate	\$7.50	\$7.25

COPY SHEETS

3-1/2" X 11" clear film suitable for LASER copier or printer to make artwork POSITIVES from magazines etc. Also can be used by directly taping, placing patterns or opaque inks to generate artwork. PACK of 5 Sheets

WT: .12



STOCK #	DESC.	1EA	5-EA
14875-DT	5pcs. Copy Film Sheets	\$4.50	\$3.75

WALL PANEL BRACKETS



VIDEO MOUNT PRODUCTS

Hinged Wall brackets used to support & provide easy access to backs of 19" rack panels. Black, static resistant Powder Coated steel. Left or right side swing. 4" depth. Includes 10 & 12-32 Rack Mount Screws.

STOCK #	PICT.	VMP#	HT.	WT.	1EA
17243-RK	A	ER-HWB1	1U	1.5	\$16.95
17244-RK	B	ER-HWB2	2U	2.3	\$18.95

STEEL 19" RACK PANELS

VIDEO MOUNT PRODUCTS

Cold rolled steel drilled & notched for standard rails, Black Powder coat finish.

STOCK #	VMP#	HT.	WT.	1EA
17237-RK	ER-1B	1U (1-3/4")	.8	\$4.95
17238-RK	ER-2B	2U (3-1/2")	1.3	\$7.95
17239-RK	ER-4B	4U (7")	2.7	\$13.95
17240-RK	ER-8B	8U (14")	5	\$19.95

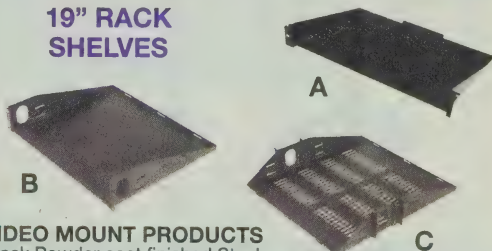
LCD MONITOR RACK MOUNT

VIDEO MOUNT PRODUCTS

Rack mount or monitors with 75 & 100mm VESA mounting pattern. Recess mounts 10-17" monitors and can be inverted for up to 23" models, 50lbs. max weight. Black, static resistant Powder Coated steel. Mounting hardware included
NOTE: Not Available For Air Shipments

STOCK #	VMP#	HT.	WT.	1EA
17245-RK	ER-LCD1017	9U	12	\$66.95

19" RACK SHELVES



VIDEO MOUNT PRODUCTS

Black Powder coat finished Steel. Drilled for standard rails. 50lb. MAX Load 17235 Center mount & Vented
NOTE: Not Available For Air Shipments

STOCK #	PICT.	VMP#	DEPTH	WT.	1EA
31033-RK	A	ER-S1	12"	5	\$22.95
17234-RK	B	ER-S2U	14-3/4"	7.5	\$29.95
17235-RK	C	ER-S2CM	19 O/A	10	\$48.95

CABLE BRACKETS



VIDEO MOUNT PRODUCTS

Black, static resistant Powder Coated steel panels for 19" racks or wall brackets. Large slotted metal rings manage all types of cables. Includes 10 & 12-32 Rack Mount Screws.

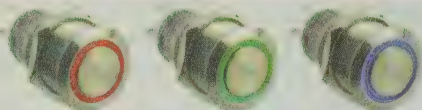
STOCK #	VMP#	HT.	WT.	1EA
17241-RK	ER-DRCM1	1U	1.3	\$17.95
17242-RK	ER-DRCM2	2U	2	\$21.95

RACK SCREWS

Pack of 10-32, Heat Treated Steel, Phillips screws 3/4" long with nylon washers. Used for mounting panels in racks.



STOCK #	DESC.	WT.	1EA
17246-RK	50pk 10-32 Rack Screws	.3	\$4.95
17247-RK	100pk 10-32 Rack Screws	.6	\$9.95

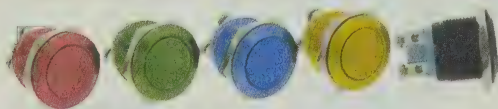


LIGHTED PUSHBUTTON SWITCH

Momentary or Alternate Action (Push ON-Push-OFF), SPDT, Full size, metal body, Pushbutton switch with LED lighted Ring around Button. Mounts in a 3/4" hole. 12V DC rated LED. Alternate action switch the button remains depressed in the "ON" position. Contacts Rated 5A @ 250VAC. Solder Terminals. Switch & LED have Separate Terminals

Dia: 7/8" Mtg.: 3/4" hole L: 1-1/2" O/A WT: .04

STOCK #	DESC.	1EA
31370-SW	Red Momentary Switch	\$4.95
31371-SW	Green Momentary Switch	\$4.95
31372-SW	Blue Momentary Switch	\$4.95
31375-SW	Red Alternate Action Switch	\$5.95
31376-SW	Green Alternate Action Switch	\$5.95
31377-SW	Blue Alternate Action Switch	\$5.95



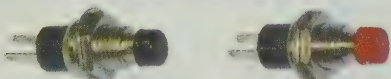
PUSHBUTTON SWITCH

IP-67 rated, CMP #MP19S-F10, Flat Button, Metal Body, SPST-NO, Pushbutton switch. Mounts in a 3/4" hole. Contacts Rated 5A @ 110VAC, 5A @ 220VAC. Compression screw Terminals. Rated IP-67 VDE/CE listed, Rohs Compliant.

Dia: 7/8" Mtg.: 3/4" hole L: 1-1/16" O/A WT: .04

STOCK #	DESC.	1EA
32091-SW	Red Momentary P/B Switch	\$4.95
32092-SW	Green Momentary P/B Switch	\$4.95
32093-SW	Blue Momentary P/B Switch	\$4.95
32094-SW	Gold Momentary P/B Switch	\$4.95
32095-SW	Black Momentary P/B Switch	\$4.95

PUSH BUTTON SWITCH



Mini push button switch, Momentary, Mounts in a 1/4" hole with Solder tabs. Rated 3 Amps @ 125VAC.

WT: .01

STOCK #	DESC.	1EA	100+EA
25019-SW	SPST Normally Open Red	\$0.29	\$0.26
25020-SW	SPST Normally Closed Blk	\$0.29	\$0.26

TACTILE PUSHBUTTON SWITCH

Action: SPST-NO

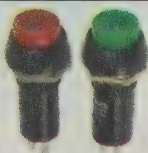
Contacts: 50mA, 12VDC

Small P.C. mount pushbutton switch. Distinctive "Click" and snap to finger when pressed. .03 Ohm contact resistance max. 250gm activation force

SQ: 12mm H: 12mm WT: .007

STOCK #	DESC.	1EA	10+EA
30034-SW	White Mini PB Switch	\$0.39	\$0.35
30035-SW	Blue Mini PB Switch	\$0.39	\$0.35
30036-SW	Red Mini PB Switch	\$0.39	\$0.35
30037-SW	Green Mini PB Switch	\$0.39	\$0.35
30038-SW	Yellow Mini PB Switch	\$0.39	\$0.35

PUSHBUTTON SWITCH



SPST pushbutton switch. Rated 3A@125V/1A @ 250VAC. Solder terminals. Mounts in 15/32" hole. TUV/CE Listed. Not Lighted

L: 1-5/8" O/A DIA: 21/32" WT: .02

STOCK #	DESC.	1EA
18378-SW	Red, On-Off Alternate Action Switch	\$1.59
18379-SW	Red, Off-(On) Momentary Switch	\$1.59
18380-SW	Red, On-(Off) Momentary Switch	\$1.59
18381-SW	Green, On-Off Alternate Action Switch	\$1.59



LIGHTED PUSHBUTTON SWITCH

Alternate Action (Push ON-Push-OFF), DPDT, Full size, metal body, Pushbutton switch with LED lighted Ring around Button. Mounts in a 5/8" hole. 12V DC rated LED. Button remains depressed in the "ON" position. Contacts Rated 2A @ 250VAC/4A @ 125VAC. Solder Terminals.

Dia: 45/64" Mtg.: 5/8" hole L: 1-1/2" O/A WT: .05

STOCK #	DESC.	1EA
18615-SW	Red Push Button Switch	\$6.95
18616-SW	Green Push Button Switch	\$6.95
18617-SW	Yellow Push Button Switch	\$6.95
18618-SW	Blue Push Button Switch	\$6.95

MINI PUSH BUTTON SWITCH

Vertical PC mount, SPDT mini push button switch

Action: ON/NONE/MOM

Contacts: 1A@250VAC/3A@120VAC

.2" pin Spacing. UL/canada/usa listed.

Mounting: P.C. Board

WT: .001

STOCK #	DESC.	1EA
18633-SW	Vertical Mount SPDT P/B Switch	\$0.89

SUPER MINI PUSHBUTTON SWITCH

MFG: ALPS

P/N: SKEYAB028A

Action: SPST-NO

Contacts: 5mA, 12VDC

Small P.C. mount elastometric pushbutton switch. 500 Ohm contact resistance max. 120gm activation force

SQ: 7.8mm H: 5mm WT: .007

STOCK #	DESC.	1EA	100+EA
18983-SW	Mini PB Switch	\$0.15	\$0.10

PUSHBUTTON SWITCH SET

4pc. MTS-102M series SPDT momentary push button switches with Tactile feedback. 1 ea. with Red, Black, Yellow & Green button tops. Mounts in a 6mm hole. Solder tab terminals. Rated 2 Amps @ 250VAC, 5A @ 125VAC.

WT: .04

STOCK #	DESC.	1EA
32729-SW	4pc. SPST-NO P/B Switch Set	\$3.95

PUSH BUTTON SWITCH

Chrome finish, raised flat Button, SPST-NO, Pushbutton switch with metal body.

Mounts in a 3/4" hole.

Contacts Rated: 5A @ 110VAC, 3A @ 220VAC. Compression screw Terminals.

Dia: 7/8" Mtg.: 3/4" hole L: 1-1/8" O/A WT: .04

STOCK #	DESC.	1EA
32099-SW	Chrome Momentary P/B Switch	\$4.95

MICRO PUSH BUTTON SWITCH

Right Angle, PC mount, SPST-NO micro push button switch

Action: OFF/MOM

Contacts: .4VA

.2" pin Spacing.

Mounting: P.C. Board

WT: .001

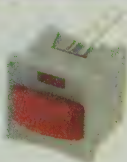
STOCK #	DESC.	1EA
18642-SW	Right Angle P/B Switch	\$0.79

PUSHBUTTON SWITCH/LED

Action: DPDT
Contacts: 0.1A/12VDC, 0.5A/250VAC
LED: Vf<2V Vr=5Vmax If=20mA max
 Snap-In or P.C. mount alternate action (Push ON/Push OFF) pushbutton switch with a Red LED indicator. .02 Ohm contact resistance max. ~250gm activation force.
 LED requires a series resistor to limit current to <20mA
 Panel Cutout: 14mm Sq.

SQ: 15.2mm **H:** 16mm (Body) **WT:** .007

STOCK #	DESC.	1EA	10+EA
32803-SW	Alternate Action PB Switch	\$0.25	\$0.20

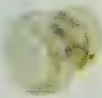


DOORBELL PUSHBUTTON SWITCH

SPST-NO, full size, lighted Pushbutton switch. Clear Body, White Button. Rated for 10-16V use. Screw terminals.

DIA: 25/32" **Mtg. Hole:** 5/8" **WT:** .01

STOCK #	DESC.	1EA
30005-SW	Doorbell Pushbutton Switch	\$0.99

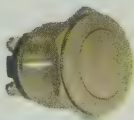


LARGE PUSHBUTTON SWITCH

SPST-Normally open, Full size, metal body, Pushbutton switch, Mounts in a 3/4" hole. Rated 2A @ 250VAC/4A @ 125VAC. Screw Terminals.

DIA: 7/8" **Mtg. Hole:** 3/4" **WT:** .05

STOCK #	DESC.	1EA	10+EA
16093-SW	SPST Normally Open Red	\$2.02	\$1.77

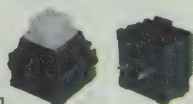


SPST PUSH BUTTON SWITCH

Keyboard/Keypad, SPST-NO push button switch with white .25in. Sq. plastic actuator. PC terminals, can be face plate mounted in .578in. Sq. hole. Contacts rated .1VA.
H: 11/16" **Body W:** 5/8" **L:** 43/64"

Mounting: P.C. Board /Face Plate **WT:** .005

STOCK #	DESC.	1EA	100+EA
18018-SW	Keypad P/B Switch	\$0.29	\$0.25



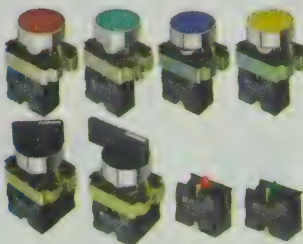
SWITCHBOARD SWITCH

Industrial control switches. Modular construction with changeable switch modules. Rated 15A@125V/3A @ 250VAC. Screw terminals. Mounts in 22mm hole.
 Pushbutton type have 1 switch module as listed, will hold additional modules.

2 position Rotary has 1 ea. SPST-NO & SPST-NC
 3 position Rotary has 2 SPST-NO & Center OFF Position

Pushbutton: **WT:** .15
Rotary: **WT:** .2

STOCK #	DESC.	1EA
30011-SW	Red SPST-NC Momentary	\$6.95
30012-SW	Green SPST-NO Momentary	\$6.95
30013-SW	Blue SPST-NO Momentary	\$6.95
30014-SW	Yellow SPST-NO Momentary	\$6.95
30017-SW	Black 2 Position Rotary	\$7.95
30018-SW	Black 3 Position Rotary	\$7.95
30020-SW	SPST-NC Switch Module	\$3.95
30021-SW	SPST-NO Switch Module	\$3.95



FANCY KEY SWITCH

ALCO SKF SPST key switch rated 4A @ 125VAC. Screw terminals, key removable in OFF position only, All keyed alike. Two keys supplied. No threads, clip mounts in 45/64" [Dia.] Double "D" hole Sold by Key # below.

L: 2	SQ: 7/8"	WT: .15
STOCK #	DESC.	1EA
18932-SW	Alco Key Switch all key # 5	\$3.95
18933-SW	Alco Key Switch all key # 10	\$3.95
18934-SW	Alco Key Switch all key # 11	\$3.95
18935-SW	Alco Key Switch all key # 13	\$3.95
18936-SW	Alco Key Switch all key # 17	\$3.95
18937-SW	Alco Key Switch all key # 18	\$3.95
18938-SW	Alco Key Switch all key # 51	\$3.95
18941-SW	Alco Key Switch all key # 14	\$3.95
18942-SW	Alco Key Switch all key # 7	\$3.95
19252-SW	Alco Key Switch all key # 15	\$3.95
19254-SW	Alco Key Switch all key # 19	\$3.95
19274-SW	Alco Key Switch all key # 16	\$3.95
19275-SW	Alco Key Switch all key # 20	\$3.95
19276-SW	Alco Key Switch all key # 25	\$3.95

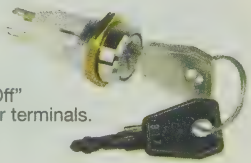


KEY SWITCH

Lorlin SRL5CD2, SPDT with "Off" position, key switch with solder terminals. 90deg. Indexing.
 Rated: 1A /5A@ 230/115VAC, 3A @ 50VDC.

Key removable in ALL positions. All keyed different. Two keys supplied. Mounts in 5/8" Dia. Double "D" hole. Max Panel thickness: .125"

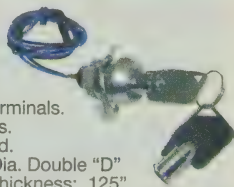
L: 1-3/8"	Rnd.: 7/8"	WT: .08
STOCK #	DESC.	1EA
19531-SW	SPDT Key Switch Keyed Different	\$5.95



KEY SWITCH

SPST key switch with solder terminals. Key removable in BOTH positions. All keyed alike. Two keys supplied. No threads, clip mounts in 3/4" Dia. Double "D" hole. 20" wire leads. Max Panel thickness: .125"

L: 1-3/4"	Rnd.: 7/8"	WT: .12
STOCK #	DESC.	1EA
18966-SW	Key Switch all key Same	\$3.95



HEAVY DUTY P/B SWITCH

SPST-NO push button switch rated 15A @ 12VDC/125VAC for use as starter switch in outboards, all terrain vehicles, lawn tractors, etc. Brass Body & Backing nut. Threaded brass bezel nut with rubber boot for sealing out dust, moisture, etc. Body of switch is not sealed. Requires approx. 5lb of force to actuate. Mounting Hole: 5/8" Mounting Bushing Length: 1-1/8"

L: 2-7/8"	W: 1-1/4" O/A	T: 7/8"	WT: .2
STOCK #	DESC.		1EA
32146-SW	Brass Starter Switch		\$4.95



PUSHBUTTON SWITCH

Mini SPST-NO (OFF-(ON)) push button switch, Momentary, 1/2" Dia. Red Button. Mounts in a 5/8" hole with Solder tabs. Rated 3 Amps @ 125VAC.

Dia: 3/4" O/A		WT: .015
STOCK #	DESC.	1EA
18497-SW	Red Pushbutton Switch	\$0.79



MINI TOGGLE SWITCH

Mini toggle switch, Mounts in a 1/4" hole. Solder tab terminals.
Rated 6 Amps @ 125VAC.

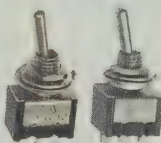


WT: .02

STOCK #	STYLE	DESC.	1EA	100+EA
31880-SW	SPST	On-Off	\$0.75	\$0.66
31881-SW	SPDT	On-On	\$0.35	\$0.28
31883-SW	SPDT	On-Off-On	\$0.38	\$0.29
31884-SW	SPDT	(Mom)-Off-(Mom)	\$0.58	\$0.44
31886-SW	DPDT	On-On	\$0.41	\$0.30
31888-SW	DPDT	On-Off-On	\$0.46	\$0.35
31890-SW	DPDT	(Mom)-Off-(Mom)	\$0.69	----

MINI TOGGLE SWITCH

Mini toggle switch, Mounts in a 1/4" hole. Solder tab terminals.
Rated 5 Amps @ 125VAC.



WT: .02

STOCK #	STYLE	DESC.	1EA	100+EA
16071-SW	SPDT	On-(Mom)	\$0.58	\$0.44
16072-SW	SPDT	On-Off-(Mom)	\$0.58	\$0.44
16073-SW	DPDT	On- (Mom)	\$0.69	\$0.52
16074-SW	DPDT	On-Off-(Mom)	\$0.69	\$0.52
16075-SW	3PDT	On-On	\$0.74	\$0.55
16076-SW	3PDT	On-Off-On	\$0.88	\$0.66
16077-SW	4PDT	On-On	\$1.42	\$1.07
16078-SW	4PDT	On-Off-On	\$1.75	\$1.31

SUB-MINI TOGGLE SWITCH

Sub-Mini toggle switch, Mounts in a 1/8" hole with Solder tabs. Rated 1 Amps @ 250VAC. TUV Listed



WT: .02

STOCK #	STYLE	DESC.	1EA	100+EA
18677-SW	SPDT	On-None-On	\$0.43	\$0.32
18175-SW	DPDT	On-None-On	\$0.52	\$0.39
18676-SW	DPDT	On-Off-On	\$0.72	\$0.54

12V LIGHTED SAFETY SWITCH

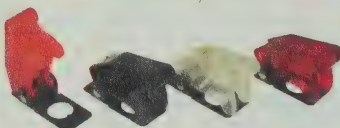
SPST, Auto type full size toggle with Red LED illuminated toggle handle. Cover must be opened to activate switch. Closing cover forces switch to original position (OFF). This switch has 3 terminals:
+12 for contact
Ground for LED
Contact for Load & LED.
Terminals: .25" Quick connect.
Rated: 25A @ 12VDC
Mounts in 1/2" hole.



WT: .08

STOCK #	DESC.	1EA
18496-SW	12VDC Lighted Safety Switch	\$2.95

FULL SIZE TOGGLE SAFETY COVERS



Plastic, Snap action safety covers for standard (1/2" Dia.) sized toggle switches. Cover must be opened to activate switch. Closing cover forces switch to original position.

WT: .03

STOCK #	STYLE	DESC.	1EA	10+EA
16100-SW		Red Safety Cover	\$0.69	\$0.59
16105-SW		Black Safety Cover	\$0.69	\$0.59
16106-SW		Clear Safety Cover	\$0.69	\$0.59
16108-SW		Transp. Red Safety Cover	\$0.69	\$0.59

FULL SIZE 15A TOGGLE SWITCH

.25" Quick Connect terminals.

Standard size toggle switch, Mounts in a 15/32" hole.
Rated: 10 Amps @ 250VAC. 15A @125VAC.



WT: .03

STOCK #	STYLE	DESC.	1EA
18371-SW	SPDT	On-None-On	\$1.95
18372-SW	SPDT	(Mom)-Off-(Mom)	\$1.95
18373-SW	DPDT	On-None-On	\$1.95
18374-SW	DPDT	On-Off-On	\$1.95
18375-SW	DPDT	(Mom)-Off-(Mom)	\$1.95

FULL SIZE 15A TOGGLE SWITCH

Standard size toggle switches, Mounts in a 1/2" hole. Rated: 10 Amps @ 250VAC. 15A @125VAC. Screw terminals.



WT: .08

STOCK #	STYLE	DESC.	1EA	100+EA
16081-SW	SPDT	On-None-On	\$0.88	\$0.66
16082-SW	SPDT	On-Off-On	\$0.95	\$0.71
16083-SW	SPDT	On-None-(Mom)	\$1.05	\$0.79
16084-SW	SPDT	On-Off-(Mom)	\$1.05	\$0.79
16085-SW	SPDT	(Mom)-Off-(Mom)	\$1.05	\$0.79
16086-SW	DPDT	On-None-On	\$1.24	\$0.93
16087-SW	DPDT	On-Off-On	\$1.24	\$0.93
16088-SW	DPDT	On-None-(Mom)	\$1.49	\$1.12
16089-SW	DPDT	On-Off-(Mom)	\$1.49	\$1.12
16090-SW	DPDT	(Mom)-Off-(Mom)	\$1.49	\$1.12

HEAVY DUTY 20A TOGGLE SWITCHES

Standard size toggle switches, Mounts in a 1/2" hole. Rated: 15 Amps @ 250VAC. 20A @125VAC. Screw terminals.



WT: .03

STOCK #	STYLE	DESC.	1EA	100+EA
12216-SW	SPST	On-Off	\$1.50	\$1.25
12217-SW	SPDT	On-On	\$1.50	\$1.25
12218-SW	SPDT	On-Off-On	\$1.60	\$1.30
12219-SW	DPST	On-Off	\$1.95	\$1.75
12221-SW	DPDT	On-Off-On	\$2.50	\$2.25

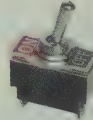
MISC. TOGGLE SWITCHES



25002-SW



25001-SW



12223-SW

Full size toggle switch, Amp Ratings are @ 125VAC.
5001: Wire leads 5002: Solder tab 5004 & 12223: Screw
Mtg. Hole: 1/2 hole

WT: .07

STOCK #	STYLE	DESC.	AMP	1EA	100+EA
25002-SW	SPST	On-None-Off	4	\$0.75	\$0.65
25001-SW	SPST	On-None-Off	6	\$1.25	\$1.00
12223-SW	SPST	On-None-Off	10	\$1.25	----

FULL TOGGLE WATERPROOF BOOT

Molded rubber toggle boot with molded in nut. For full sized toggle switches 16081-16090 & 12216-12221

Thread: M12X0.75

WT: .009

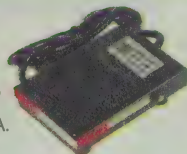


STOCK #	DESC.	1EA	10EA
16312-SW	Full Toggle Boot	\$2.49	\$2.25

FOOT SWITCH

General use foot switch with metal case, non slip treadle & feet
Contacts: SPST-NO 125/250VAC @ 10A.
Actuation pressure: Approx. 3 lbs.
With 1m pigtail Cord

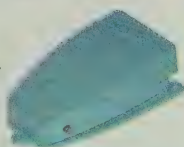
L: 4"	W: 2-7/8"	H: 1-1/8"	WT: .54
STOCK #	DESC.	1EA	
18150-SW	General Use Foot Switch	\$5.95	



FOOT SWITCH

Metal case, Medium duty foot switch for industrial use.
Contacts: SPDT 380VAC/220VDC @ 5A.
Actuation pressure: Approx. 4lbs.
Cord Not Included

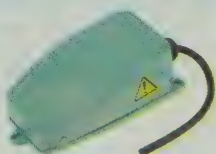
L: 5-1/4"	W: 2-5/8"	H: 1-5/8"	WT: .34
STOCK #	DESC.	1EA	
18152-SW	Medium Duty Foot Switch	\$7.95	



FOOT SWITCH

Metal case, Medium duty foot switch for industrial use.
Contacts: SPDT 250VAC @ 10A.
Actuation pressure: Approx. 3lbs.
7in. Pigtail.

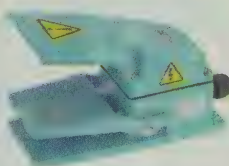
L: 6-1/2"	W: 3-1/4"	H: 2-1/2"	WT: 1
STOCK #	DESC.	1EA	
18501-SW	Medium Duty Foot Switch	\$9.95	



FOOT SWITCH

Metal case, top protected Heavy duty foot switch for industrial use. Pedal protected from dropped items.
Contacts: SPDT 125/180VAC @ 15A.
 1/4hp @ 250VAC
Actuation pressure: Approx. 4lbs.
Cord Not Included

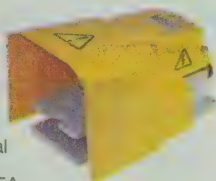
L: 7-3/4"	W: 3-7/8"	H: 5"	WT: 1.6
STOCK #	DESC.	1EA	
30048-SW	Protected Foot Switch	\$19.95	



SAFETY FOOT SWITCH

Metal case, enclosed Heavy duty foot switch for industrial use. Pedal protected on 3 sides.
Contacts: SPDT 125/480VAC @ 15A.
 1/4hp @ 250VAC
Actuation pressure: Approx. 4lbs.
Cord Not Included

L: 8-1/8"	W: 5-7/8"	H: 4-7/8"	WT: 2.4
STOCK #	DESC.	1EA	
30049-SW	Safety Foot Switch	\$24.95	



MINI ROCKER SWITCH

Snap-in panel mount, SPST Rocker switch.
 Rated: 6A @ 125VAC. Black Body & Rocker.
 .187" quick connect terminals. 13mm X 20mm Cutout.

L: 7/8" OA	W: 7/8"	WT: .02	
STOCK #	DESC.	1EA	10+EA
30192-SW	Mini Rocker Switch	\$0.75	\$0.65



12V LIGHTED ROCKER SWITCH

Action: SPST
Contacts: 16A@12VDC
Lamp: 12VDC

Lighted Snap-in panel mount rocker switch with .25 Quick Connect terminals. Black Body, Red Rocker. Mounts in 13.25mm X 29mm cutout. One side of Lamp is connected to switch contact, other to 3rd terminal that has to be grounded.

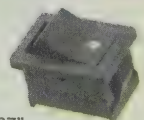
L: 1-1/4"	W: 5/8"	H: 1-5/8" O/A	WT: .05
STOCK #	DESC.	1EA	
30183-SW	12V Lighted Rocker Switch	\$1.25	



MINI ROCKER SWITCH

Snap-in panel mount, SPST Rocker switch.
 Rated: 6A @ 125VAC. Black Body & Rocker. .187" quick connect terminals. 13mm X 20mm Cutout.

L: 7/8" O/A	W: 7/8"	WT: .02	
STOCK #	DESC.	1EA	10EA
30192-SW	Mini Rocker Switch	\$0.75	\$0.65

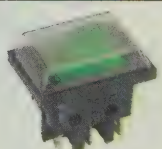


LIGHTED ROCKER SWITCH

Action: DPST
Contacts: 16A@250VAC/3/4hp
Lamp: 28VDC/AC

Lighted Snap-in panel mount rocker switch with PVC Dust cap and .25 Quick Connect terminals. Black Body, Green Rocker with black lettering, mounts in 22 X 30mm cutout. UL/CSA/VDE listed

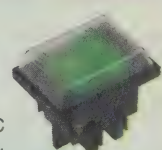
L: 1-7/8"	W: 1-3/16"	H: 1-5/8"	WT: .05
STOCK #	DESC.	1EA	
30053-SW	Lighted 16AAC Rocker Switch	\$1.95	



ROCKER SWITCH

Action: DPST
Contacts: 16A@250VAC/3/4hp
 Snap-in panel mount rocker switch with PVC Dust cap and .25 Quick Connect terminals. Black Body, Green Rocker with white lettering, mounts in 22 X 30mm cutout. UL/CSA/VDE listed

L: 1-7/8"	W: 1-3/16"	H: 1-5/8"	WT: .05
STOCK #	DESC.	1EA	
30052-SW	16AAC Rocker Switch	\$1.75	



120V LIGHTED ROCKER SWITCH

Action: SPST
Contacts: 16A@120VAC
Lamp: 120VAC (Neon)

Lighted Snap-in panel mount rocker switch with .25 Quick Connect terminals. Black Body, Red Rocker. Mounts in 13.25mm X 29mm cutout. One side of Lamp is connected to switch contact, other to 3rd terminal that has to be connected to neutral.

L: 1-1/4"	W: 5/8"	H: 1-5/8" O/A	WT: .05
STOCK #	DESC.	1EA	
30184-SW	120V Lighted 1 Rocker Switch	\$1.25	



12V LIGHTED ROCKER SWITCH

Lighted, snap-in panel mount, SPST Rocker switch. Rated: 20A @ 12VDC. Black Body & Rocker with LED. .187" quick connect terminals. One side of LED is connected to switch contact, other to 3rd terminal that has to be grounded. 20.2mm mounting hole.

DIA: 29/32" O/A	L: 1-1/8"	WT: .02	
STOCK #	DESC.	1EA	10EA
30189-SW	Red Lighted Rocker Switch	\$0.99	\$0.89
30190-SW	Blue Lighted Rocker Switch	\$0.99	\$0.89



12VDC MINI ROCKER SWITCH

Mini snap-in panel mount, SPST Rocker switch.
Rated: 10A @ 12VDC. Black Body with Blue Translucent Rocker. .187" quick connect terminals. One side of LED is connected to switch contact, other to 3rd terminal that has to be connected to Ground. 20.2mm mounting hole.

DIA: 29/32" OA L: 1-1/8"

WT:.02

STOCK #	DESC.	TEA	TEA
30191-SW	SPSTMini Rocker Switch	\$1.49	\$1.25



ROCKER SWITCH

Action: DPST

Contacts: 16A@250VAC

Snap-in panel mount rocker switch with .25 Quick Connect terminals. White Body & Rocker with Black lettering.

Mounts in 22.5 X 31mm cutout. CE listed

L: 1-1/4"

W: 1"

H:1-1/2"

WT:.04

STOCK #	DESC.	TEA
31244-SW	16A AC DPST Rocker Switch	\$0.99



20A ROCKER SWITCH

Action: SPST

Contacts: 20A@120VAC

Snap-in panel mount rocker switch with .25" Quick Connect terminals. Black Body, Red Rocker. Mounts in 11mm X 26mm cutout.

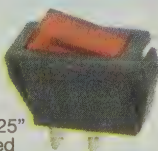
L: 1-1/4"

W: 9/16"

H: 1-3/8" O/A

WT:.005

STOCK #	DESC.	TEA
30185-SW	120V, 20A Rocker Switch	\$0.99



20A ROCKER SWITCH

Action: DPDT (ON/NONE/ON)

Contacts: 20A@120VAC

Snap-in panel mount rocker switch with .25 Quick Connect terminals. Black Body, Red Rocker. Mounts in 26mm X 26mm cutout.

L: 1-1/4"

W: 1"

H: 1-3/8" O/A

WT:.03

STOCK #	DESC.	TEA
30186-SW	DPDT 120VAC, 20A Rocker Switch	\$1.49



20A ROCKER SWITCH

Action: DPDT (ON/OFF/ON)

Contacts: 20A@120VAC

Snap-in panel mount rocker switch with .25 Quick Connect terminals. Black Body, Red Rocker. Mounts in 22mm X 26mm cutout.

L: 1-1/4"

W: 1"

H: 1-3/8" O/A

WT:.05

STOCK #	DESC.	TEA
30187-SW	DPDT Rocker Switch	\$1.49



20A ROCKER SWITCH

Action: DPDT (ON/OFF/ON)

Contacts: 20A@120VAC

Snap-in panel mount rocker switch with .25 Quick Connect terminals. Black Body, Red Rocker labeled "O" center "I" one direction & "II" in other. Mounts in 22mm X 26mm cutout.

L: 1-1/4"

W: 1"

H: 1-3/8" O/A

WT:.05

STOCK #	DESC.	TEA
30188-SW	DPDT Labeled Rocker Switch	\$1.49



MICRO ROCKER SWITCH

Vertical PC mount, SPDT micro Rocker Switch

Action: ON/NONE/MOM

Contacts: 1A@250VAC/3A@120VAC

.1" pin Spacing. UL/canada/usa listed.

Mounting: P.C. Board

WT:.004

STOCK #	DESC.	TEA
18640-SW	Micro 1A Rocker Switch	\$0.69



MINI ROCKER SWITCH

Panel mount, Solder Tail, SPDT mini Rocker Switch

Action: ON/OFF/ON

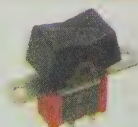
Contacts: 2A@250VAC/5A@120VAC

.2" pin Spacing. UL/canada/usa listed.

Mounting: Panel

WT:.011

STOCK #	DESC.	TEA
18636-SW	Mini 2A Rocker Switch	\$0.79



FLOAT SWITCH

Selectable NO or NC

Plastic float switch with reed switch contacts rated:

Max switching Volts: 24VDC

Max Switching Amp: 0.05

Max carry current: 0.1 Amp

Max Contact resistance: 0.4 Ohm

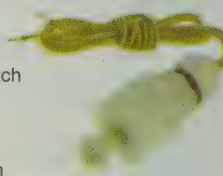
AS SHIPPED: Contacts Normally Closed with float at the base. FOR Normally Open, Slide off plastic "C" ring and reverse Float. .25" +/-10% travel to activate reed switch. Wire Length: 12". Rated for water only!

H: 2"

DIA: 3/4"

WT:.04

STOCK #	DESC.	TEA
30453-SW	Plastic Float Switch	\$3.95



X-Y KEY PADS

12 and 16 button Peel-N-Stick keypad.

Blue number buttons with white lettering, Red Alpha & or symbol buttons with White lettering all on a Black background. Bubble type contact pad rated 5mA@12VDC. When button is pressed a Row is connected to a Column. 4in. flex circuit cable with socket connector for .025"sq. X .1" spaced header pins.

H: 13"

W: 2-3/4"

T: 1/32" Body

WT:.015

STOCK #	DESC.	TEA
31045-SW	3 X 4 X-Y Keypad	\$2.95
31046-SW	4 X 4 X-Y Keypad	\$2.95



METAL X-Y KEYPAD

Heavy duty numeric, phone style 3X4 X/Y matrix Keypad. Features: Metal bezel, metal keytops, black legend and gold plated solder pads for connections.

Actuation Force: ~100gms

Contacts rated: 200mA max @ 24VDC,

Contact Resistance: 200ohms max.

H: 2-7/8" O/A Bezel 2-1/2" W: 2" T: 7/16"

WT:.2

STOCK #	DESC.	TEA
32340-SW	3X4 Metal Keypad	\$4.95



16 BUTTON X-Y KEY PAD

GRAYHILL, 4 X 4 button keypad & Bezel. Blue buttons with white lettering on a Black background. Bubble type contact pad rated 5mA@12VDC. When button is pressed a Row is connected to a Column. 8 header pins at top of back. 4 corner threaded mounting studs.

L: 4" W: 4" T: 1/4" (Body) WT:.12

STOCK #	DESC.	TEA
18317-SW	4 X 4 X-Y Keypad	\$4.95



16 BUTTON X-Y KEY PAD

4 X 4 button keypad & Bezel. White buttons with Gray lettering on a White background. Elastomeric contact pad rated 5mA @ 12VDC. When button is pressed a Row is connected to a Column. 8 header pins at bottom of back. 4 corner mounting holes.

L: 2-3/4" W: 2-9/16" T: 1/2" (Body) WT:.05

STOCK #	DESC.	TEA
18316-SW	4 X 4 X-Y White Keypad	\$2.95



MINI SNAP SWITCH WITH ROLLER

SPDT micro switch with roller. Contacts rated 3A @ 125/250VAC. 55gm actuation force. Solder terminals. 2 mtg. holes. 3/4" lever.

L: 3/4" (Body) W: 3/8" T: 1/4" WT: .005

STOCK #	DESC.	1EA	10+EA
16317-SW	Mini Snap Switch	\$0.89	\$0.79

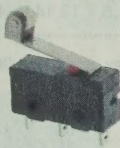


MINI SNAP SWITCH WITH ROLLER

SPDT micro switch with roller. Contacts rated 5A @ 125/250VAC. 50 gm actuation force. Solder terminals. 2 mtg. holes. 3/4" lever. CE Listed.

L: 3/4" (Body) W: 3/8" T: 1/4" WT: .005

STOCK #	DESC.	1EA	10+EA
33389-SW	Mini Snap Switch	\$0.89	\$0.79

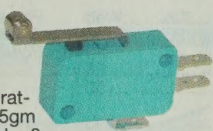


LEVER/ROLLER SNAP SWITCH

SPDT Lever/roller switch. Contacts rated: 4A @ 125VAC 1" lever requires 125gm force. .187" quick connect terminals. 2 hole mounting. UL/VDE/TUV Listed.

L: 1-1/8" (Body) W: 5/8" T: 3/8" WT: .015

STOCK #	DESC.	1EA	50+EA
16314-SW	Roller Micro Switch	\$1.25	\$0.99

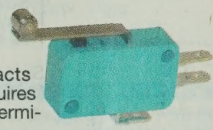


LEVER/ROLLER SNAP SWITCH

SPDT Lever/roller switch. Contacts rated: 10A @ 250VAC 1" lever requires 100gm force. .187" quick connect terminals. 2 hole mounting. CE Listed.

L: 1-1/8" (Body) W: 5/8" T: 3/8" WT: .015

STOCK #	DESC.	1EA	50+EA
16316-SW	Roller Micro Switch	\$1.25	\$0.99

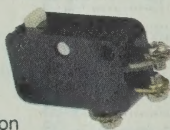


SNAP SWITCH

Mulon VM13B, SPDT Snap switch. Contacts rated: 5A @ 125/250VAC. Button requires approx. 250gm force. screw terminals. 2 hole mounting.

L: 1-1/8" (Body) W: 5/8" T: 3/8" WT: .013

STOCK #	DESC.	1EA
30057-SW	Mulon Snap Switch	\$0.99



PCB MINI SNAP SWITCH

SPDT micro switch with contacts rated 1A @ 125VAC. 250gm actuation force. PC terminals.

L: 3/4" W: 5/16" T: 1/4" WT: .005

STOCK #	DESC.	1EA
19150-SW	PC Snap Switch	\$0.50



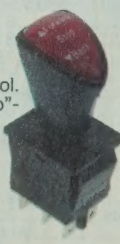
MOTOR CONTROL SWITCH

Snap-in DPDT switch designed for motor control. Un-lighted Red inset labeled "Forward"- "Stop"- "Back".

Contacts: DPDT Center Off (ON-OFF-ON)
Not Momentary
Rated: 16A @ 250VAC/20A @ 125VAC.
.250" Quick Connect terminals
Actuator Length: 1-1/2"
Cutout: 30mm X 22mm

H: 3" O/A W: 1" (25.5mm) L: 1-3/16" (31mm) WT: .04

STOCK #	DESC.	1EA
32827-SW	Motor Control Switch	\$2.95

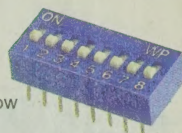


8 POS. DIP SWITCH

Raised slide actuator DIP switches.

Pin Spacing: .100" Pin/Pin Adj.
.300 Pin/Pin Row to Row

Contact: 100mA Max. Non-switching
.25mA @ 24VDC Switching
Board or IC Socket mounting



WT: .002

STOCK #	DESC.	1EA
31855-SW	8 Pos. DIP Switch	\$0.75

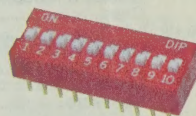
10 POS. DIP SWITCH

P/N: DS-10

Raised slide actuator DIP switches.

Pin Spacing: .100" Pin/Pin Adj.
.300 Pin/Pin Row to Row

Contact: 100mA @ 50VDC Max. Non-switching
50mA @ 24VDC Switching
P.C. or Socket mounting



WT: .004

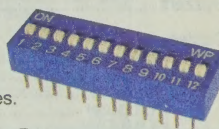
STOCK #	DESC.	1EA
18790-SW	10 Pos. DIP Switch	\$0.89

12 POS. DIP SWITCH

Raised, slide actuator DIP switches.

Pin Spacing: .100" Pin/Pin Adj.
.300 Pin/Pin Row to Row

Contact: 100mA Max. Non-switching
.025A @ 24V Switching
P.C. or Socket mounting



WT: .002

STOCK #	DESC.	1EA
18524-SW	12 Pos. DIP Switch	\$1.20

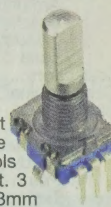
ROTARY ENCODER/ SWITCH

Continuous rotation encoder with 20 positions and a SPST-NO pushbutton switch. Uses 2 bit Gray coding on the output of encoder to provide direction and pulse. Used as adjustment controls in radios, tv, etc. 6mm dia. X 12mm "D" shaft. 3 pins for encoder output, 2 pins for switch. 11x13mm x 30mm body size.

Encoder rated: 10mA@5VDC. 30K rotations
Switch rated: 10mA@5VDC. 20K operations

W: 11mm L: 13mm H: 30mm O/A WT: .011

STOCK #	DESC.	1SET
30403-SW	Switch & Encoder	\$1.95

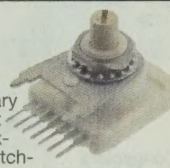


SP5T ROTARY SWITCH

ITT P/N RTA-H-4-1S05-C, SP5T rotary switch. Each number completes circuit (1,2,3,4,5) others are Open. 36Deg. Indexing. Contact Rated: 60VAC @ .15A switching/5A carry. 1/4" shaft with screwdriver slot. 3/8-32 threaded bushing. Back panel mount in .385" hole. PC board terminals.

W: 1" H: 1-3/8" O/A D: 1" WT: .02

STOCK #	DESC.	1EA
32597-SW	SP5T Rotary Switch	\$0.99



BCD THUMB SWITCH

KM1-0-9 thumb switch. BCD Encoded, 1 button "Up" other "Down. Each number completes circuit (0,1,2,4,8) others are Open.

Contact Rated: 50VAC/28VDC @ .1A switching. Front panel mount with Snap-in Endplates (Sold Separately). Solder connections. White numbers on Black. Stackable for multi-digits
Cutout: W: 8mm X # switches + 4mm H: 22.4mm

W: 8mm H: 24mm D: 40.2mm O/A WT: .007

STOCK #	DESC.	1EA
32083-SW	BCD Thumb Button Switch	\$0.75
32084-SW	Thumb Switch Endplates (Pair)	\$0.25



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Actuators		DATAK		Meters	
Air	58	PC Board Supplies	91	Digital Test	80
Linear	51,55,56	DC/DC Converters	32,33	Panel	74-72
Adhesives	22,23	Digital Volt Meters		Microphones	Web
Air Cylinders	58,Web	Hand Held	84,85	Motion Detectors	20
Amplifiers	19	Panel	70-72	Motors	
Annunciators	Web	Diodes		DC	56-58
Alligator Clips	87,88	Rectifier	82	Controller/Driver	7,13,18,52,53
Attenuators	86	LED	76-81	Step	51-55
ARDUINO		Displays		MPJA	
Microcontrollers	2	LCD	6,7,13,14,Web	Digital Volt Meters	84
Shields & Modules	2-18	LED	79	Power Supplies	24,25
Case	8	Enclosers, Cases, Boxes	3,8,90	Solder Stations	37,38
Audio		"F" Connectors	62	IR Thermometers	84
Adapters	63-64	Fans		Oscilloscope probes	86
Cables	64,65	AC	43	Panels	91
Connectors	62-64	DC	44,45	Panel Lights	81
Microphones	Web	Finger Guards	43	Peltier Thermoelectric Modules	83
Speakers	Web	Laptop	44	Photo Detectors	Web
Banana Plug/Jacks	87,88	Cords	43	PIR Detectors	20
Battery	36,50	FET		Plug Strips/Centers	49
Binding Posts	88	Microphones	Web	Plug Supplies	
Bits, Driver	41	Fiber Optic		AC Output	35
BNC Connectors	61,62	Audio	Web	Power Cords	48
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Buzzers	Web	Air	59	DC/DC Converters	33
Cables		Fuses Web		Adapters	30-32
Audio	64,65	Flashlights	Web	Programmable	25
Cat-5E	68	Gauge 59		Rare Earth Magnets	Web
Coax	65	Gas Sensors	6	RASPBERRY-PI	3
Computer	67	Headsets/earphones	Web	Rectifiers	
HDMI/DVI	65,Web	Heatsink	60	Bridges	82
Phone	Web	Heatshrink	99	Diodes	82
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Printer	67	Power Supplies	26-28	Relay Rack	Web
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Brackets	Web	Motion Detector	11	Suckers	39
Inspection	Web	Integrated Circuits	83	Wick	39
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Capacitors	89	Joystick	10	Switches	
Case/Cabinet	3,8,90	Kits, Service Packs, Assort ents		DIP	97
Cat-5e		Capacitor	89	Key Pad	96
Cable	68	Fuse	Web	Micro/Leaver	97
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Patch Cords	68	LED	77	Toggle	94
Tester	84,85	Photocell	Web	Terminal Strips	50
CA/CCTV		Regulator	83	Terminal Lugs	Web
Attenuators	Web	Resistor	89	Test Equipment	84-88
Cable	65	Transistor	83	Thermoelectric Modules	83
Connectors	61,62	Zener	Web	Thermostats	19
Power Supplies	26-32	Lamps	81	Tools	
Chemicals	21-23	Laser	78,Web	Crimp	40,66,85
Chokes	36	LCD		Clip Leads	86-88
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Cable	65	LED's		Pliers	40
Computer		Bargraph	79	Screwdrivers	41
Adaptors	67	Color 3/5/8/10mm	77-80	Solder Stations	37-39
Cables	67	Displays	79	Strippers	40
Connectors	66	Driver	34	Telephone	40
Gender Changers	67	Flashlights	Web	Transformers	35
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Connectors		Lamps	81	Transceivers	17
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BNC	62	Panel Lights	81	Cables	65,66
Cat-5	67	Panel Meters	70-72	Chargers	Web
DB	66	Tester	85	Meters	85,Web
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Telephone	68	MEANWELL		Jumper	12,73
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Step Motor	52,53				
Temperature	19,Web				
Counters, Impulse	Web				
Crimp Terminals	Web				
Crimp Tools	40,66,85				
Cylinders	58,Web				

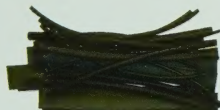
BLACK HEATSHRINK ROLLS



L: 100ft. Roll

STOCK #	DESC.	WT.	1EA
16334-HS	.8mm/.031" Black Heatshrink	.34	\$5.95
16335-HS	1mm/.039" Black Heatshrink	.4	\$5.95
16339-HS	9mm/.354" Black Heatshrink	1.1	\$10.66
16340-HS	12mm/.472" Black Heatshrink	1.4	\$12.96
16341-HS	18mm/.708" Black Heatshrink	2.6	\$24.95

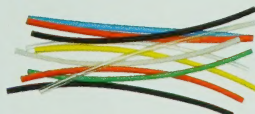
6" BLACK HEATSHRINK ASSORTMENT



24 pc. of 6in. long Black Shrink tubing in assorted Dia. Flexible polyolefin rated for 125 deg. "C"/600V. Listed dia. before shrinking. 4 pcs. each of following sizes:
3/32", 1/8", 3/16", 1/4", 3/8" & 1/2"

STOCK #	DESC.	WT.	1EA
16830-HS	Black 6" long Shrink Bagged	.2	\$3.95

6" COLOR 1/8" HEATSHRINK ASSORTMENT



10 pc. of 6in. long X 1/8" Dia. Shrink tubing in assorted colors. Flexible polyolefin rated for 125 deg. "C"/600V
Black 2pcs. Blue 1pc. Yellow 1pc.
Clear 2pcs. Green 1pc.
Red 2pcs. White 1pc.

STOCK #	DESC.	WT.	1EA
16831-HS	Color 1/8" Shrink Bagged	.2	\$2.25

6" COLOR 3/16" HEATSHRINK ASSORTMENT



10 pc. of 6in. long X 3/16" Dia. Shrink tubing in assorted colors. Flexible polyolefin rated for 125 deg. "C"/600V
Black 2pcs. Blue 1pc. Yellow 1pc.
Clear 2pcs. Green 1pc.
Red 2pcs. White 1pc.

STOCK #	DESC.	WT.	1EA
16832-HS	Color 3/16" Shrink Bagged	.2	\$2.50

6" COLOR 1/4" HEATSHRINK ASSORTMENT



10 pc. of 6in. long X 1/4" Dia. Shrink tubing in assorted colors. Flexible polyolefin rated for 125 deg. "C"/600V
Black 2pcs. Blue 1pc. Yellow 1pc.
Clear 2pcs. Green 1pc.
Red 2pcs. White 1pc.

STOCK #	DESC.	WT.	1EA
16833-HS	Color 1/4" Shrink Bagged	.2	\$2.75

6" COLOR 3/8" HEATSHRINK ASSORTMENT



10 pc. of 6in. long X 3/8" Dia. Shrink tubing in assorted colors. Flexible polyolefin rated for 125 deg. "C"/600V
Black 2pcs. Blue 1pc. Yellow 1pc.
Clear 2pcs. Green 1pc.
Red 2pcs. White 1pc.

STOCK #	DESC.	WT.	1EA
16834-HS	Color 3/8" Shrink Bagged	.2	\$2.95

DUAL WALL HEATSHRINK ASSORTMENT



37 pc. of 4in. long black, adhesive lined shrink tubing.
Flexible polyolefin rated for 135 deg. "C"
Listed dia. before shrinking,
1/8" 12pcs. 1/4" 10pcs.
3/8" 6pcs. 1/2" 4pcs.
3/4" 3pcs. 1" 2pcs.
Includes hinged plastic box with latches

STOCK #	DESC.	WT.	1EA	12+EA
16484-HS	Dual Wall Heatshrink Kit	.52	\$16.95	\$14.95

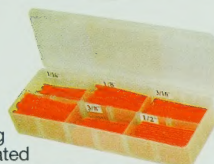
2-1/2" BLACK HEATSHRINK ASSORTMENT



158 pc. of 2-1/2in. Black Shrink tubing in assorted Dia. Flexible polyolefin rated for 125 deg. "C"/600V. Listed dia. before shrinking,
1/16" 60pcs. 1/8" 40pcs.
3/16" 20pcs. 1/4" 18pcs.
3/8" 10pcs. 1/2" 10pcs.
Includes hinged plastic box with latches

STOCK #	DESC.	WT.	1EA
16835-HS	2-1/2" Black Heatshrink Kit	.2	\$10.95

2-1/2" RED HEATSHRINK ASSORTMENT



158 pc. of 2-1/2in. Red Shrink tubing in assorted Dia. Flexible polyolefin rated for 125 deg. "C"/600V. Listed dia. before shrinking,
1/16" 60pcs. 1/8" 40pcs.
3/16" 20pcs. 1/4" 18pcs.
3/8" 10pcs. 1/2" 10pcs.
Includes hinged plastic box with latches

STOCK #	DESC.	WT.	1EA
16836-HS	2-1/2" Red Heatshrink Kit	.4	\$10.95

4" BLACK HEATSHRINK ASSORTMENT



154 pc. of 4in. Shrink tubing. Flexible polyolefin rated for 135 deg. "C". Listed dia. before shrinking,
1/16" 56pcs. 3/32" 35pcs.
1/8" 28pcs. 3/16" 18pcs.
1/4" 9pcs. 3/8" 8pcs.
Includes hinged plastic box with latches

STOCK #	DESC.	WT.	1EA	12+EA
16482-HS	Black Heatshrink Kit	.4	\$12.95	\$10.95

4" COLOR HEATSHRINK ASSORTMENT



160 pc. of 4in. long shrink tubing. Includes Black, Blue, Clear, Green, Red, White & Yellow colors. Flexible polyolefin rated for 125 deg. "C"/600V. Listed dia. before shrinking,
1/16" 60pcs. 3/32" 35pcs.
1/8" 25pcs. 3/16" 20pcs.
1/4" 10pcs. 3/8" 10pcs.
Includes hinged plastic box with latches

STOCK #	DESC.	WT.	1EA
16843-HS	4" Assort. Color Shrink Kit	.4	\$11.95

**THIS IS THE ONLY CATALOG YOU WILL RECEIVE UNLESS
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CATALOG#

17-01H

CUSTOMER #

314310

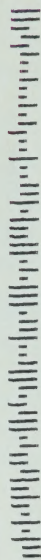
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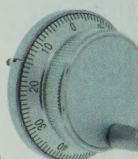
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SIMSBURY CT 06070-1623



HANDWHEEL ENCODER



Hand Encoder for CNC Machines, Microcontrollers

Handy, Bi-phase rotary encoder with built in Handwheel. Provides a 2 Phase output with both True and Complement signals.

Power: 5VDC @ <100mA

Output: Push/Pull A to -A / B to -B (Differential Line Driver)

Phasing: A before B or B before A (rotation dependent)

Waveform: Square Wave

Resolution: 3.6deg. (100Pulse/360deg. rotation)

Speed: < 500RPM

Connections: Terminal Strip

DIA: 80mm **H:** 50mm (O/A) **WT:**

STOCK #	DESC.	WT.
33106-MI	100P/R Bi-Phase Hand Encoder	\$19.9

REMOTE REVERSING CONTROLLER



Motor reversing remote controller for DC motors up to 60Watts. Has inputs for Limit Switches (Not included). Includes 3 button Remote Control UP (Fwd.) / OFF / DOWN (Rev.). Controls direction by reversing the polarity on the 2 motor output terminals.

Ideal for Gates, Overhead doors etc.

Power: Controller: 12-36VDC

Remote: A23 12V Battery (Not Supplied)

Modes: 2: Set by jumper on controller

Jog: Motor energized as long as Button Pressed.

Continuous: Energized until "STOP" pressed or Limit

Switch is activated

Range: >50ft. Depending on Antenna location/extension and terrain

Output: 12-36VDC 60W/Max 5A (10surge) UP/OFF/DOWN

Connections: Terminal Strips for Power, Motor & Limit

0.1Pitch header for external remote hard wired direction switches

L: 4" **W:** 2-3/8" **T:** 1-3/16" **Ship WT:** 1.1

STOCK #	DESC.	WT.
33003-MD	DC Motor Reversing Controller	\$24.9

DC SPEED CONTROL

Modular, enclosed, wide range control uses PWM to vary the speed of DC motors. On-board adjustment pot. Terminal strip for power & Motor connections.

Input: 12- 80VDC

Output: 20A max. 30A Surge

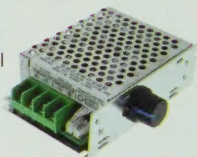
Recommended: 12V/250W, 24V/350W, 48V/500W

Range: 0%-99% of rated motor RPM

Max. Frequency: 21KHz.

L: 4-3/8" **W:** 3-3/4" **O/A** **H:** 1-3/8" **WT:** .5

STOCK #	DESC.	WT.
33377-MD	20A Motor Speed Control	\$15.95



MINI CROSSHAIR LASER HEAD

<5mw, 635nm Red Laser Diode head used for aiming, alignment or other uses.

Spread: ~22in. Sq. @ 24in.

5.0VDC operation, Forward current <40mA.

5V max Reverse Voltage.

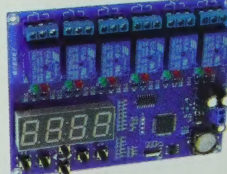
Brass Body with 4in Leads



L: 22mm **Dia:** 9mm **WT:** .02

STOCK #	DESC.	WT.
33029-LZ	Crosshair Red LASER Head	\$2.95

5 CHANNEL RELAY TIMER



5 independently programmed

ON/OFF timed SPDT Relays.

Status LED indicators for each relay. 6th. Relay activates when any other relay is active. 4 digit RED LED display.

1 timing cycle/relay/24hr

Note: This is a 24hr. mode timer.

LOAD(s) should Not Be Connected During Set-up
Set-up requires practice & patience

Displays HH:MM

On board coin cell battery back-up of clock & settings.

Power: 12VAC/DC

Resolution: 1min

Timing Accuracy: 1min.

Relay Contacts: SPDT 10A @ 30VDC, 250VAC

Output: Terminal strips for Relay Contacts & Power

4 corner mounting holes

L: 4-3/4" **W:** 3-5/8" **H:** 3/4" **WT:** .3

STOCK #	DESC.	WT.
33376-MI	5 Channel Timer	\$18.9

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